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The attention of every reader of the paper is particularly directed to the *BUYER'S GUIDE* on pages 3, 4, 6, 8, 10, 12, 13 and 14 and to the *ALPHABETICAL INDEX* of Advertisers on pages 15 and 16. At the present time buyers in every part of the world are no doubt interested in establishing new connections for the purchase of lines cut off by the European war and it is recommended that this Buyer's Guide be retained for reference as it contains a classified list of several hundred articles, together with the names of manufacturers or exporters from whom they may be obtained.

Correspondence regarding any topic of international trade interest is invited from readers of the Review and contributions on such subjects, if available for publication, will be paid for at space rates. Photographs of commercial scenes will be purchased, if suitable for reproduction. Manuscripts and photographs not used will be returned promptly if postage is sent for that purpose.

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The imposing colonnade connecting the North and South Pavilions of the Municipal Building, with its archway across Chambers Street and epitome in stone of New York's history—NEW AMSTERDAM . MDCXXV . MANHATTAN . NEW YORK . MDCLXIV

Photo Edwin Levick, N. Y.

NEW YORK'S THREE CENTURIES OF COMMERCIAL GROWTH

The Striking Contrasts Between the Small Beginnings and the Great Achievements Commemorated by the City's Tercentenary Celebration

THREE centuries ago this year the States General of the Netherlands granted a charter which was the genesis of the commercial development of the little village of New Amsterdam, on Manhattan Island, at the mouth of the Hudson River. This was the beginning of the great city of New York which, this last autumn, celebrated the tercentenary of the founding of its chartered commerce.

Commerce has been the chief business of New York and the principal source of its power from the time that Hendrik Hudson landed on Manhattan Island and bartered beads and hatchets and red cloth for foods and furs. Commerce has peopled with ships from every quarter of the globe its vast landlocked harbor and splendid waterways and has created a metropolis that in its size and wealth is surpassed only by London.

Even in the days when the ships of the Dutch traders carried most of the city's imports and exports, New York was famous for being the place where the very newest of everything could be obtained. Women of quality went there for their gowns and men of fashion looked to its shopkeepers for their outfitting. From such small beginnings have been evolved the colossal system of scientific merchandising that has attained some of its highest developments in the great retail and wholesale establishments that to-day are among the most striking features of New York's commercial enterprise.

A striking view of the Woolworth Building, looking through one of the arches in the facade of the Municipal Building

The first of the retail "dry goods stores," as they were then called, was founded only a little more than a century ago. In those days the proprietor was personally acquainted with all his customers. He stood at the door to welcome them as they entered and to thank them for their trade when they departed. In 1858 the first department store was founded, and the total of its trade the day it opened was $11.65. From this humble beginning have sprung scores of huge establishments, the largest of which represents an investment of millions of dollars in merchandise and buildings and real estate. Many of them are from seven to ten stories in height, cover entire city blocks and have acres of floor space. Their system of organization is the result of years of study and experience. Each class of merchandise has its own department, which is in charge of an individual manager who is as much responsible for it as if he were sole owner. Everything from kitchen utensils to the most costly of silks and jewels may be had in these great bazaars that within their four walls contain as much merchandise as a single important commercial city of a century ago. In the last twenty-five years the "department store idea" has spread not only all over the entire United States, but has gained a foothold in London and other large centers of population abroad.

New York's first manufacturing industries were the preparing of peltries and the grinding of corn. These are perpetuated in the city's coat-of-arms in which the windmill and the beaver are conspicuous figures. To-day the city is the chief manufacturing center of the United States. In its 34,000 factories, great and small, about 683,000 persons are employed. The city stands first in the clothing industry, and produces about 70 per cent. of the men's and women's garments made in the United States. Other industries, in the order of their importance, are printing and publishing, meat packing and meat supplies, foundries and machine shop products, tobacco products, bakery products, silk goods, brewing, millinery and lace goods. Other great industries are the refining of sugar and petroleum, the roasting and grinding of coffee, the manufacture of carpets and rugs, sewing machines, lead pencils, oilcloths, linoleum, manufactures of jewelry, and the production of bulk chemicals. In fact, the industries of New York are so varied that they cover practically every line.

The beginning of New York's transportation facilities was a bus line that represented an investment of $300 and traversed a distance of three miles. The present transit systems—elevated, surface and subway—total more than 1,600 miles of tracks and carry more than two billion persons annually. The additions to the subway and elevated lines now being built will cost $300,000,000.

The city depended on wells for its first water supply. Its present daily consumption is 500,000,000 gallons. The new aqueduct system, which will be completed in about a year, will more than double the present supply, and will bring water from the Catskill Mountains, nearly 100 miles away. The total cost of this improvement will be $176,000,000. The first electric street lamp was installed in 1882. In the year 1914 the two principal boroughs of the city used two-thirds of a billion kilowatt hours of electric power alone—equal to one-fifteenth of all the power used in the United States.

New Amsterdam, from an old print. The view shows the lower part of Manhattan Island, for which the Dutch paid the Indians $24, at about the point shown in the illustration at the top of the opposite page

In 1626 sixty guilders, or about $24, was paid to the Indians for the 22,000 acres then erroneously estimated as the area of the Island of Manhattan. The present area of New York City is 209,218 acres, or 326.89 square miles, and the land alone is valued at $8,390,185,572.

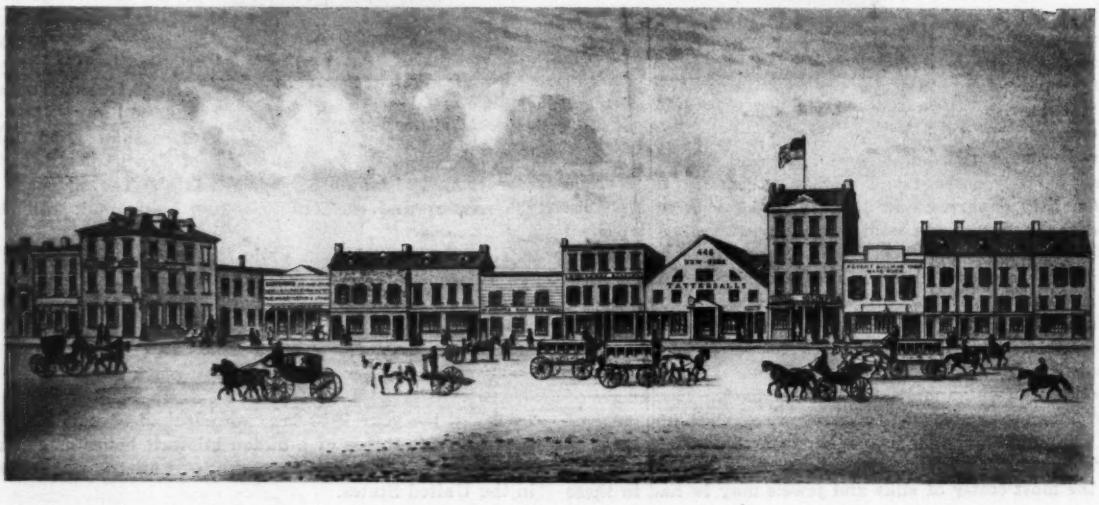
In the beginning there was not a single inn. Strangers were entertained by the Governor or by private citizens. But as the city grew, one hotel after another was built. No small part of New York's commercial success has been due to the excellent accommodations that it has provided for its visitors. The best hotels of to-day are veritable palaces compared with even the most famous ones of fifty years ago, yet the rates are relatively not much greater.

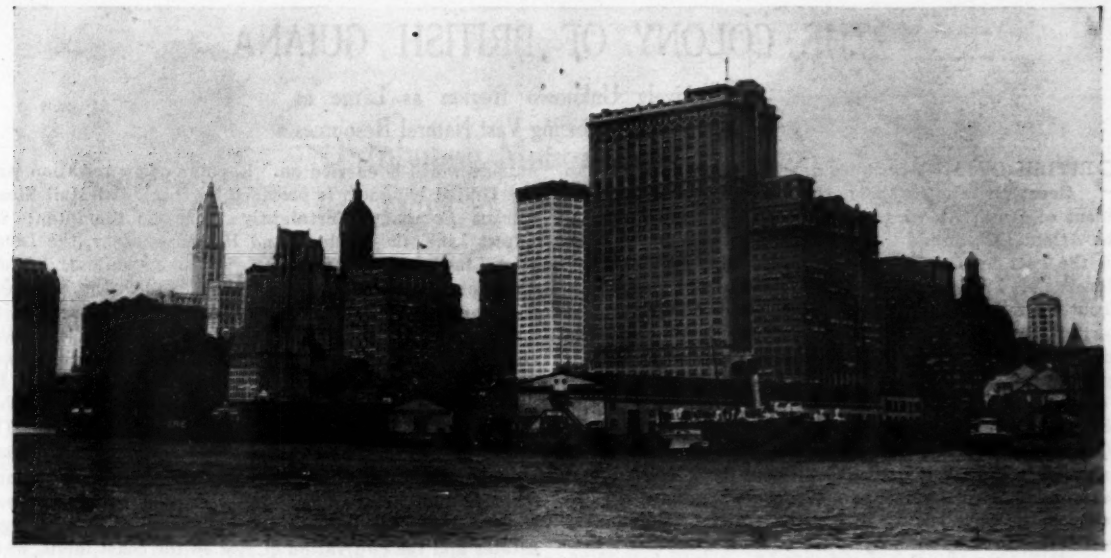
New York's fine harbor has been a great factor in the growth of its vast commerce. Measured along the shore line the port has 771 miles of waterfront, 578 belonging to New York City and 193 to the State of New Jersey, which is just westward across the Hudson River. The number of miles of improved waterfront, measured around piers and shore line, is 290. Piers have been built to accommodate the new 1,000-foot ships that are the latest features of the ocean passenger carrying trade.

In 1674 the port passed definitely into the hands of the English and remained in their possession until the American revolution and the establishment of the United States of America. In the early years of the nineteenth century the commerce of New York made great strides. Fleets of swift sailing vessels bore American products across every sea and made the flag of the new republic a familiar sight in all ports of the world.

With the invention of the steamboat the character of the waterfront and of the vessels underwent a radical change. It was not many years before steam began to supersede sails, and side-wheel boats were crossing the Atlantic. The development of the inland waterways of the country proceeded apace, and brought an ever-increasing volume of products to New York for export to other countries. Fifty years ago the era of the swift expansion of American railways began, and continued steadily. These vast systems of land transportation provided more rapid means of communication and the transportation of merchandise and materials. They built up great cities far inland, and caused the rapid growth of many seaports on the Atlantic, Pacific and Gulf coasts of the United States, but these commercial changes did not disturb New York's supremacy. In 1800 New York took the first place in the export trade of the United States. In the decade ending in 1850 it supplied 26 per cent. of the entire exports of the country; in 1860 this had risen to 35 per cent. and in 1880 it was 48 per cent. New York's foreign trade, both export

An interesting picture of Broadway, between Howard and Grand Streets, taken from an old print published about 1840. This block is now considered to be very far downtown, but was then halfway between Wall Street and the open country





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The lower end of Manhattan Island, showing the towering Whitehall Building which faces Battery Park and the new Adams Express Company building just behind it, with the Woolworth Building in the distance

and import, has averaged about $2,000,000,000 a year of late.

Along the Hudson River side of Manhattan Island the city has built a system of huge covered piers and docks that in size and exterior architectural beauty are unsurpassed by similar facilities at any of the world's ports. The piers extend straight into the river, which at this point is more than a mile in width. The hugest steamers yet built are swung into their berths there quickly and with greater ease than in some other harbors, for the tide's maximum rise and fall and speed of flow are rarely troublesome.

On the opposite side of the river—the mainland on the western shore—there are other miles of great piers, used especially by the large steamers in the trans-Atlantic trade. At the docks along the East River—as the estuary connecting Long Island Sound with the harbor is called—are still more fleets of steam vessels, boats of smaller size engaged in coastal traffic and in trade with the West Indies and South America. Along the Brooklyn shore there are many indentations and bays that form harbors within the harbor. In these places are herded the hundreds of freighters—the delivery wagons of the sea—that carry the bulk of the seaborne tonnage that comes and goes at New York. In the pier sheds from which these world-girdling ships are loaded are piled thousands of tons of freight from every corner of America bound to every part of the globe. Still other mountains of merchandise are being unloaded from weather-worn steamers that have just completed their long voyages from distant ports—cargoes of jute from India, tea from China, wool from Australia, coffee from Brazil, and strange woods and fibres from the islands of the South Pacific.

Since the beginning of the European war New York has had to assume new responsibilities in the way of providing many countries with the things they need but whose sources of supply abroad have been disorganized or destroyed by the conflict. The manufacturers and merchants of the city, and those of the country at large, therefore are paying especial attention to the wants of the peoples whose former commercial connections are paralyzed temporarily, and are expanding their productions to meet the requirements of the world.

Sky line of Manhattan Island from the Battery to the Municipal Building, taken from across the East River, and showing Equitable Building, now just nearing completion, the largest edifice of its kind ever erected

Photo by Edwin Levick

THE COLONY OF BRITISH GUIANA

A Comparatively Unknown Region as Large as Great Britain and Possessing Vast Natural Resources

BRITISH GUIANA occupies an area equal in extent to Great Britain, in the northeastern part of the continent of South America. It is bounded on the north by the Atlantic Ocean, on the south and southwest by Brazil, on the east by Dutch Guiana, and on the northwest by Venezuela. It has a seaboard commencing at Punta Playa about 18 miles to the west of the Waini River (in the northwestern part of British Guiana) and trending thence in a southeasterly direction to the mouth of the Courantyne River (in the county of Berbice), a distance of about 270 miles. The depth from the sea southward varies from about 540 miles in the western part of the colony to about 300 miles on the eastern side. The area, since the boundaries with Venezuela and Brazil have been settled and demarcated, is estimated at 90,277 square miles. It lies between the parallels 1° to 8° North and meridians 57° to 61° West. Its proximity to the equator insures a warm but not excessively hot climate, with a remarkably small range of temperature. In fact, on the coast lands, which are swept all the year round by the cool northeast trade wind, the thermometer rarely touches 90° F. in the shade, and seldom falls below 75° F. In the forest belt, which extends in some places for a considerable distance from the coast, the damp heat is often oppressive, but as the country rises towards the interior the refreshing breeze is again felt and the park-like savannas are continually wind-swept. The sun, although vertical twice in the year, is not dangerous, and sunstroke is almost unknown. The blue sky flecked with cumulus clouds is a striking contrast to the "brazen heavens" of the East. "It is summer all the time" in British Guiana, even during the two wet seasons—January and February and May, June and July—which prevents monotony. Now that modern discoveries have solved the more pressing problems of tropical hygiene and sanitation, British Guiana can take its place as one of the loveliest countries and most delightful climates in the world. Malaria still exists, it is true, but infection can be avoided—it is a matter which depends entirely upon one's own strength of mind. Good health, as in England, is correlated with common sense. Yellow fever (that ancient bugbear), never epidemic in the colony, has been unknown since 1884, and is nowadays shorn of all its terrors.

The colony may be divided broadly into three belts. The northern one consists of a low lying flat and swampy tract of marine alluvium, known as the coastal region. This rises gradually from the seaboard and extends inland for a distance varying from 10 to 40 miles. It is succeeded by a broader tract composed of sandy and clayey soils. This belt is chiefly undulating land and in places consists of sand dunes rising 50 to 180 feet above sea level. The more elevated portion lies to the south of the above-mentioned regions. It rises gradually to the southwest, between the river valleys, which are in many parts swampy, and contains three principal mountain ranges, several irregularly distributed smaller ranges, and in the southern and eastern parts many isolated hills and mountains. The eastern portion is almost entirely forest-clad, but on the southwestern side there is an extensive area of flat grass-clad savanna land elevated about 300 feet above sea level. The colony is traversed by several large rivers, which with their numerous tributaries and branch streams form a vast network of waterways. All the larger rivers of the colony are navigable as far inland as the tide reaches, but numerous rapids, cataracts and falls render navigation of the upper reaches difficult.

Georgetown, the chief port and capital of British Guiana, is situated at the mouth of the Demerara River. It is situated in the midst of the principal agricultural districts of the colony, and from it communication with the outside world is carried on. Regular communication with the United Kingdom is provided by the Royal Mail Steam Packet Company, fortnightly from Southampton; the Direct Line, the Leyland and Harrison Lines, the Liverpool Line, and the East Asiatic Line, while the Elder Demster Line also calls occasionally. With the European continent communication is maintained by the East Asiatic Line, the Royal Dutch Mail Service and the Compagnie Générale Transatlantique. The Quebec Steamship Company, the Armstrong Line and the Royal Dutch West Indian Mail Service afford regular communication with New York, and the Pickford & Black Line with Canada. The population of the colony in 1911 was estimated at 296,041, and consists of British, Portuguese, Negroes, East Indians, Chinese and the aboriginal Indians. The greater proportion of the East Indians are associated with the sugar estates and the cultivation of rice on the coast lands, while the forest industries and gold and diamond mining are carried on by negroes. The chief industries are sugar, gold and diamonds, balata, rice, timber, cacao, coffee, cocoanuts, rubber, limes and raising cattle and growing "provisions," such as plantains, cassava, tannias, yams, sweet potatoes, etc. The principal exports are sugar and its by-products—rum, molasses and molascuit (cattle feed)—gold, balata, rice, timber and hides. The front portion of the coastal regions is largely occupied by sugar estates, and the bulk of the rice is also grown upon this section of the colony. A considerable increase has in recent years taken place in the acreage under rice. Market gardens are situated to the rear of the sugar estates, back of the coastal village lands and on the lower reaches of the rivers. Cocoanuts are grown in the coastal regions, while cacao and coffee are chiefly cultivated on the lower river lands. Cattle raising is conducted on the flat pastures near the coast and on the savannas of the hinterland. Rubber is being cultivated on the river lands and also on the slightly elevated tract of country immediately behind the coastal regions. Rubber is obtained from *Sapium Jenmani* growing in the forests of the elevated section located not far from the sea, while balata is chiefly found in the forest-clad hinterland. Great interest is being evinced in the possibilities of British Guiana as a rubber-producing country. Rubber plantations in the other British colonies in this latitude are among the most profitable and most popular industries. The area of land suitable for rubber planting in this colony in accessible portions is very large. Of the 57,770,000 acres of land in British Guiana only about 2,000,000 acres are alienated from the Crown. The remainder is open for beneficial occupation and it is estimated that of this vast area over 9,000,000 acres are accessible. The major portion is suitable for rubber growing.

Records that have been taken from time to time by Government officers traveling in the interior show that the minimum temperature not unfrequently is below 70° F. and the maximum register is sometimes as high as 95° F.

Rainfall records are kept at 65 recording stations in the colony, of which 17 are situated in the interior. The average monthly precipitations of rain recorded at the inland stations for the last 21 years vary from 84.82 inches at Towakaima, Barama River, to 149.77 inches at Marlborough, Pomeroon.

There is, as a rule, in the forest region in the interior no well-marked dry season. The distribution of the rainfall is generally more regular throughout the year than it is nearer the coast, where dry season is always experienced from August to November. Rarely at the forest stations do ten days pass on which rain does not fall, except occasionally in the months of September and October in some districts.

Alice Joyce, Kalem Company, an attractive star who, although still a young woman, has played many thrilling parts

Distributing Motion Picture Films in War Time

New York Now the Great Center of Distribution for American Films Throughout the World—Some of the Famous Stars of the Silent Drama

Mary Fuller, Universal Film Company, an artiste of the screen who has acted more parts than Sarah Bernhardt

IF an audience at an American moving picture theater could be transported instantly to some of the foreign lands where photo plays are shown—and that means almost anywhere in the world—probably they would see flitting across the screen the same plays and players that had just been affording them entertainment. It is the boast of the principal producers of American films that their stars are as well known and as much appreciated in Cairo or Tokio or Tasmania as they are at home.

Mary Pickford, of the Famous Players Co., is only 21, making her the youngest important star in filmdom

Motion picture films have become an important item in the foreign trade of the United States. Five years ago there was practically no business done abroad in this line. It cost European film makers so much less to produce their photo plays—owing principally to the comparatively small salaries of artists and others connected with film production—that they were able to offer their product considerably below American prices. Nevertheless, film producers in the United States decided to introduce their photo plays in other lands, and to rely for success on their excellencies of plot, staging, acting and mechanical details. They made no attempt to reduce their prices materially.

The result exceeded their expectations. The demand for American films grew with astonishing rapidity, and spread until it covered the world. From the beginning it has been the policy of producers in the United States to send only their newest films—their latest releases—abroad, unless the customer specified older and cheaper films. This practice led to time becoming a vital element in the supplying of this foreign demand.

John Bunny, Vitagraph Company, a comedian who amuses a million people a day around the world

Originally the custom was to exhibit the films to buyers in London or Paris or Berlin, and, after they had made their selections, to send the order by mail or telegraph to the United States. At that time all the "positive" films were made in the United States, and it took from two to six weeks to deliver each order at its destination in the great distributing centers abroad. The "positive" film is the one that is used in the projecting camera, and is made from the negative that is taken when the play is produced. There is practically no limit to the number of positive films that can be made from a single negative.

In order to overcome this delay many of the principal American producers established their own plants, in London and elsewhere, for making these positive films so that they could be delivered immediately to their customers. This did not involve, as a rule, making more than one negative of each production. As many positives as were necessary to supply the domestic demand were made, and the negative was then sent abroad. Should an original negative be lost or destroyed, it is possible to make a "secondary" negative from one of the positive films. Though this is slightly less sharp in its definition, a "secondary" film still makes a satisfactory projection on the screen.

The greatest American manufacturer of raw films—as the unexposed films are called—also established a large factory abroad. This was a still further aid to supplying the foreign market simultaneously with that of the United States, the release dates, in many cases, being so arranged as to coincide. Owing to these arrangements, although the quantity of exposed and unexposed films actually exported from the United States has not increased rapidly in the last twelvemonth, the revenues derived from their export trade by Ameri-

Marc MacDermott, Edison Company, a finished and finely artistic actor in many motion picture dramas

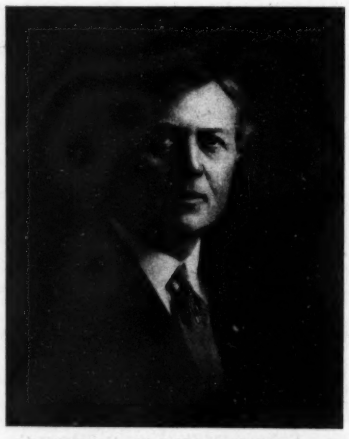
Lillian Walker, Vitagraph Company, a successful comedienne in the lighter form of motion pictures

cans in the photo play industry have grown much faster.

Up to the outbreak of the European war London was the great distributing center for American films. Buyers from every land flocked there to make their selections and shipments. Since early in August, however, New York has become the principal point of distribution, although London still continues to take a great many films, both for consumption in the United Kingdom and for export to British colonies and dependencies.

Australia is now buying practically all its films in the New York market and they are being shipped direct. South Africa buys a few, but the time advantage still rests with London, owing to the frequency of the steamer service between England and the Cape. The buying for the cinema theatres of the Far and Near East is shifting to New York, and South America is sending its orders direct to New York instead of via London. If the war is long continued, it is expected that New York's temporary ascendency as a distributing center will become permanent.

In the United States the custom is to lease the films to exhibitors, this being done through the intermediary of certain large distributing companies. Films for export, however, as a rule, are sold outright, but seldom to the ultimate consumer—the owner of a motion picture theatre—except in such countries as Australia, where this branch of the amusement industry is largely in the hands of a single company. The custom of ordering films through export commission merchants in New York, like any other merchandise, is becoming general in many countries under present conditions.



Hobart Bosworth, of Bosworth, Inc., a motion picture actor-manager, and also a successful producer

The United Kingdom has been one of America's largest customers for films for exhibition in the British Isles. France has bought less, owing to the trade there being in the hands of two great French producing companies. In Germany the rigidity and complexity of the censorship over films has been somewhat against the American product, largely for the reason that any pictures in which policemen or other persons in uniform appear in a humorous light are absolutely tabooed there, even if the scenes are purely American.

The American photo players are said to be the highest paid dramatic artists in the world. A number of stars are reputed to receive from $5,000 to $25,000 a year, and one stage director, it is asserted, draws $50,000 annually for superintending the productions of one of the great producing companies. The names and faces of the principal photo players are familiar to audiences all over the world. They are, therefore, considered a great asset by the American producers who figure that their drawing powers are greater than even the large salaries paid.

Each of the great film producing companies claims, naturally, that it has the most talented and highest salaried stars in the industry. Judging solely by the popularity of the players, there are more than a score who unquestionably stand in the first rank of stars of the silent drama.

Mary Pickford is only 21. She is the youngest important star in filmdom, and yet one of the oldest in years of work before the camera, having begun her remarkable career some five years ago. Millions of persons all over the globe wait for the newest film subjects in which she appears, and her face and form probably are known to more people than any woman that ever lived. She may be called the most photographed person in the world, for she seems to typify the spirit of the moving picture and the amazing art of the screen.

She was born in Toronto, Canada, and began her stage career when she was five years old. At 16 she attracted the attention of one of the principal producers of photo plays, and left the spoken stage for the silent drama. Recently she returned temporarily—as a star—to regular dramatic work. In this she was remarkably successful, but after a season went back to the screen again.

Recently, in Australia, a fund was raised to give her a loving cup. This was purchased with 13,651 Australian pennies contributed by that number of admirers who had never seen her in actual life, but only in the films. A special representative was sent from Australia to the United States to present the cup to her as a token of appreciation from the Australian public.

In the six years that Mary Fuller has been an artiste of the screen she has created and acted more parts than Sarah Bernhardt in all her long career on the stage. Through the films' multiplication of her personality she plays each night before more thousands of persons in all parts of the world than the great French tragedienne used to in a year's tour of the globe.

Many persons who have had experience on the stage and in the silent drama have tried to define the difference between the requirements of each. It is Miss Fuller's belief that motion picture acting and the art of the pantomimist, for instance, are two separate things. The latter can be learned by anyone who is adaptable. Acting for the camera, however, has to "come from the depths." The mind plays a greater part than the body in making clear the sentiments that are expressed.

Making a picture before the camera is not a silent affair. All the actors talk. They try to live the parts, for the moment, as they themselves see them. When Miss Fuller is in a classic play—a tragedy, for example—she says she speaks in the stately language of the bygone day in which the scene is laid, and, if the emotion of the drama calls for it, weeps real tears.

Miss Fuller has created a wide range of parts. She has written many of the plays in which she has appeared. The queens of history have a fascination for her. Also she aspires some day to play a king—Richard III. She considers him one of the most pathetic characters in history.

Thomas Moore, Kalem Company, a star in many pictures who is also a prominent stage director

Alice Joyce is another star of the first magnitude who is still a very young woman—hardly more than a

girl. She was a photographers' model and never had been on the stage or had taken any lessons in acting before she became a motion picture player, but her success was positive and immediate. The first pictures in which she appeared had not been out a month before the Kalem Company began getting hundreds of letters asking for her picture. She was the first of many moving picture actresses whose photographs were sold. Nowadays that is a profitable branch of the business with every motion picture production company.

It is said that Alice Joyce is so timid that she has a bad attack of stage fright whenever she has appeared in person before an audience But when it comes to risking her neck in making pictures she seems to have no nerves at all. A war play in which Miss Joyce appeared not long ago, for instance, was a thriller of thrillers. A series of dramatic events, each more tense and harrowing than its predecessors, raced across the screen.

There was one scene where two locomotives met in a spectacular crash on a high bridge. Both of them were reduced to scrap by the collision. This effect cost more than $20,000, or about $200 per foot of film. Alice Joyce, as the heroine, drove one of the locomotives. In the film story she did not know that the other engine was coming, its approach being hidden by a curve in the road until it was too late to avert the disaster.

The bridge on which the engines met spanned a broad, deep river. It was a sheer drop of more than fifty feet from the rails to the water. Alice Joyce was alone in the engine cab. She opened the throttle and rushed on to the bridge and into the picture at forty miles an hour. She waited until she saw the other train—a few feet and fewer seconds away. The two engines had to meet in the center of the bridge and the center of the picture. This called for quick work and nerves of steel. Those who were watching the picture being made say that Miss Joyce threw back the lever and set the air brakes with the automatic celerity of a real locomotive engineer in the face of danger. The next second she was poised on the footboard for her leap from the flying engine into the water below. She made a straight jump outward and went down feet first. She was fished out unhurt, and her first exclamation was an inquiry if the picture was all right. Told that it had been a great success, she said that she was glad—and fainted.

Ruth Roland, Kalem Company, the leading actress in a Californian colony of motion picture players

Miss Joyce has done hundreds of such venturesome things—in fact, they are considered a part of the day's work by every motion picture player who is much in the public eye. But she has been in quite as many other film dramas which do not rely so much on obvious physical danger in order to pull the heart strings. Some of these have been gorgeously costumed parts, like "The Theft of the Crown Jewels," in which she wore a $3,000 gown and pearls and diamonds to the value of $1,000,000.

William Wadsworth, Edison Company, a comedian who has played many parts and amused millions of people

In the early morning hours when the first milk wagons are rattling through the deserted streets of American cities John Bunny's shadow is still working hard in lands where the evening is just beginning. By that time the audiences in the Philippines are crowding into the motion picture playhouses to see John Bunny romp through some roaring comedy. About the same hour he will be sweeping across the screens of a few score quaint theaters in the Mikado's empire. The Japanese will be long abed and John Bunny will have his day's work around New York well toward its conclusion when audiences in the theaters of London and other cities of Great Britain are laughing at his performances.

Helen Holmes, Kalem Company, the heroine of a series of sensational railroad photo plays

Taking it all in all, the world around, it is said that about a million persons see John Bunny on the screen in the course of every 24 hours. His face is known throughout the whole civilized world, and he receives hundreds of letters daily requesting his autograph and picture. Mr. Bunny preserves the most striking of these. One of them is a letter from a Mandarin in China requesting not only his autograph but his official seal.

Marc MacDermott had achieved a success in the spoken drama before he began acting for the camera. For a number of years he was seen in the English speaking countries of the world in connection with some of the greatest stars of the stage in Shakespearian plays and modern dramas. In the films he has appared in a variety of roles, from feeble old men to alert young army officers.

Among her co-workers in film photoggraphy Lillian Walker is known as "Miss Tomboy," because since she has been in the "movies" everything athletic that a girl can do has been demanded of her. Among audiences around the world her nickname is "Dimples." Her nom de theatre—Walker—is a combination of the names of her Swedish parents.

Lillian Walker was educated in New York City, and was first employed as a telephone operator. Then she went on the stage, and later into motion picture work. She soon established herself as a comedienne in the lighter form of motion pictures. She is a daring horsewoman, has driven a racing automobile time and again, and has been the victor in more than one swimming contest.

Hobart Bosworth was unusually successful as an actor in the spoken drama before he achieved his present fame as a star of the screen. His strong personality and fine physique have made him especially popular in such roles as the "Sea Wolf," a maritime Odyssey of the Arctic Seas. Within the last year or so Mr. Bosworth has established a large motion picture producing company of which he is the manager as well as the star.

Thomas Moore has achieved considerable prominence as a stage director as well as a star in motion pictures. Usually he appears in leading parts in plays in which his wife, Alice Joyce, is the star.

Helen Holmes is familiar to audiences everywhere as the heroine of a series of sensational photo plays dealing with railroad life, known as "The Hazards of Helen." In

Courtesy Moving Picture World

Francis X. Bushman, of the Essanay, who has thrilled millions with his dramatic portrayals for the screen

Maurice Costello, Vitagraph Company, who has been the star character in more than a thousand photo plays

J. Warren Kerrigan, of the Universal, is famous the world over as a film star, especially in romantic roles

one of these she is a telegraph operator who rides horseback across country to save a train from wreck. She goes down an almost perpendicular bank, the horse stumbles, falls, turns almost completely over, and throws Miss Holmes into the water. She swims out, reaches the telegraph line, climbs up to the wires, taps them and saves the train.

In another picture she is on a locomotive, pursuing another that has been stolen. The two are racing along parallel tracks. When they are side by side she makes a daring jump from one engine cab to the other.

Ruth Roland went on the stage when she was three, in Honolulu. Her parents were theatrical people. She is now but 20, but for the last three or four years has been one of the screen's most brilliant stars. She never has been east of the Rocky Mountains—except on the screen. In the films, however, she has traveled everywhere, and her name is known in every written language in countries where there are motion picture theatres.

Ruth Roland lives near Los Angeles, California, in a suburban town whose population is made up almost entirely of motion picture players. She enjoys outdoor life of every description, and, like most other stars of the "movies," is accustomed to take all sorts of physical risks in the course of the day's work, such as driving a four-horse stage coach at full speed down a steep mountain road.

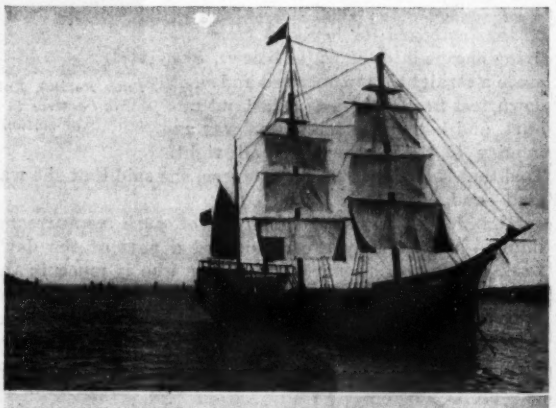
William Wadsworth is a comedian. Millions of persons, in the years that he has been flitting across the screen, have laughed at his characterizations of love-sick men—young and old—henpecked husbands, music-mad rustics, woman-haters, mangled pedestrians, and so on. All these roles are in direct contrast to those in which he appeared on the speaking stage, where he played serious, tragic and romantic parts.

This leap from a cliff 60 feet high is an incident in a sensational film that has thrilled large audiences

Courtesy Mutual Film Corporation

General Wolfe's original flagship, and the Gordon Highlanders in the "Fall of Quebec," a $60,000 film production

Courtesy of the Kalem Company



NORMAL SHIPPING CONDITIONS RETURNING

Steamers are Much in Demand at all the Atlantic and Gulf Ports of the United States owing to the Great Increase in Exports

A CONSIDERABLE increase in the exports from the United States and the relative unsafety of certain sections of the great highroads of the sea, owing to the widening of the field of hostilities on the ocean, recently caused a sharp advance in maritime freight rates and in war risk insurance. All international commerce, for a time, was more or less affected. These conditions reached their maximum in the early days of November, but by the middle of that month the shipping situation returned to the nearly normal position that prevailed immediately preceding the flurry.

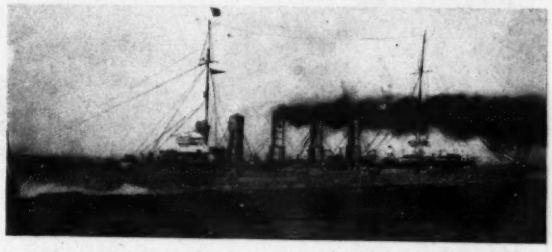
At present the ocean freight rates to such ports of Europe as are open to commerce do not exceed an average of 25 per cent. above normal. To Asia, Africa, Australia and New Zealand, the premium varies from 20 to 25 per cent. To the West Indies, Central and South America, the rates have advanced but little, if any, on boats flying neutral flags, but on boats of British register freights and insurance are at somewhat higher figures. These vary, however, almost from day to day, especially in the maritime traffic bound for the west coast of South America.

At the present writing the full cargo steamer market at the port of New York is exceedingly firm, and the demand for boats for trans-Atlantic voyages is particularly strong. The supply of vessel tonnage of all kinds is far from being excessive, and this is especially the case as regards steamers of neutral nations. For these the call is unusually urgent.

War risk insurance has had even wider fluctuations, notably in the fields where German warships have been a menace to commerce under the British flag. Until the *Emden* was destroyed, November 9, the war risk insurance on ships under the British flag bound for ports in the Indian Ocean was almost prohibitive. It has now returned to its usual status, in the neighborhood of 5 per cent. The activities of the German war fleet on the west coast of South America, in the early days of November, caused a general disorganization in the marine insurance rates to those parts, but this has now subsided in a great degree.

The differential in favor of American steamers is particularly emphasized by these happenings. To Peru and Chile, for instance, via the Panama Canal, war risk, irrespective of the nationality of the steamer, at present fluctuates from 3 to 7 per cent., while on boats flying the American flag the latest published rate of the United States Government Bureau is ½ of 1 per cent.

At the port of Boston importations continue small, compared with what they were before the war began. The bulk of the maritime movement at that gateway consists of exports, and, as is the case at New York and elsewhere, the volume of shipments going abroad is so great as to make the demand for vessels to carry the commerce almost outrun the supply. The advance in freight rates, generally speaking, from Boston, is about 25 per cent. over normal, but the rates on grain, flour, etc., have risen fully 100 per cent.

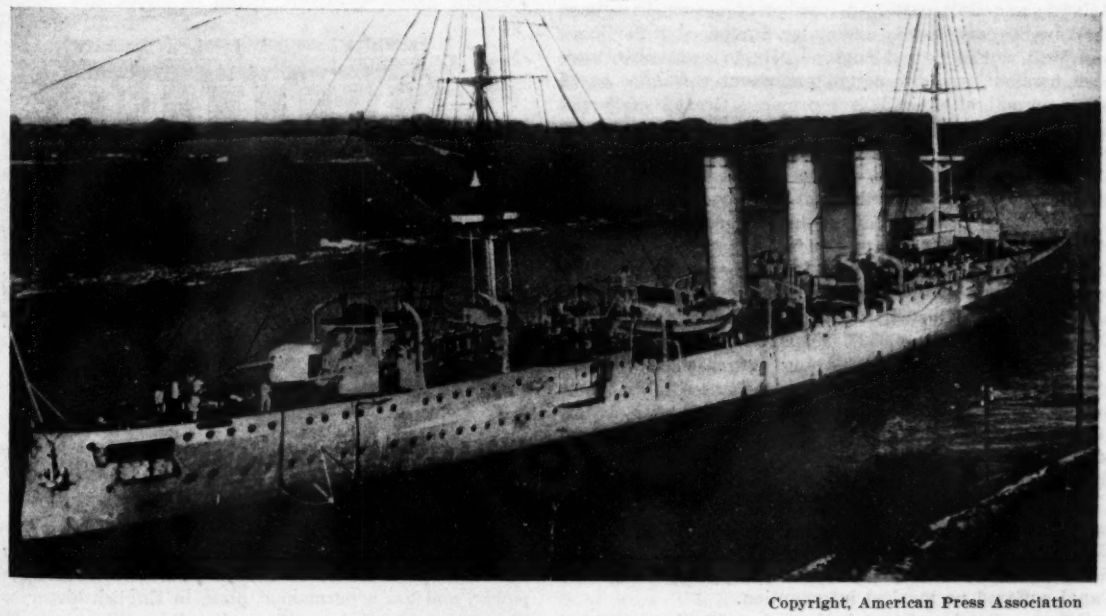


Courtesy The Sun, New York

A German commerce destroyer—the Karlsruhe—that has been particularly active in the Caribbean and South Atlantic

At Philadelphia a similar increased demand for space has forced steamship rates upward. Grain elevators are reported as loaded to capacity, and large shipments are noted of steel rails, wire and other similar material. Steamers plying regularly between Philadelphia and Liverpool, Manchester, Glasgow, Leith and London are said to have their eastbound cargoes booked ahead to the latter part of December.

The volume of business at the port of Baltimore is also



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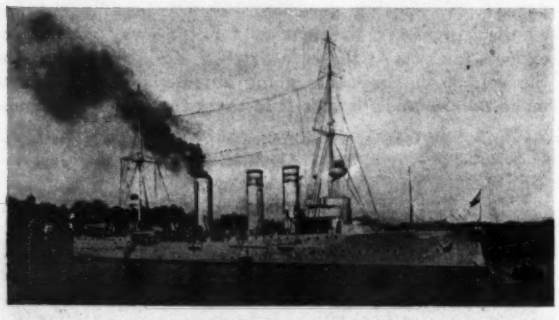
The German cruiser Emden that had an extraordinary record as a commerce destroyer before she was finally sunk in the Indian Ocean by an Australian battleship

increasing steadily, and freight rates are firm, especially as regards shipments to Europe.

Mobile is one of the great gateways on the Gulf for the exportation of cotton, as the region tributary to it is among the richest devoted to the production of that staple. The shipments of cotton from Mobile, however, since the war began have been negligible. It is said that numerous tramp steamers are available, but that shippers regard the rates demanded as being excessive and therefore are awaiting reductions. On the other hand, the inability to secure return cargoes doubtless prevents these itinerant carriers from being able to offer much better terms.



The Dresden is a sister ship of the Emden. Her field of operations has been in the South Pacific

New Orleans is an important grain and cotton shipping port, and a large quantity of merchandise and materials passes through there bound to Europe, South and Central America. During the month of October there was a marked improvement in the shipping situation at that port, the movement in grain and flour being greatly in excess of the same season a year ago. Sailings to neutral and open ports in Europe are proceeding with regularity. Indications are that the tonnage of liner and tramp steamers will be ample to handle the exports, although the demand has caused the same rise in rates that has been noted at other Atlantic and Gulf ports. A number of vessels have been chartered to carry horses and mules, purchased in the South and West, to France and England. Exports of lumber have been nominal, and the cotton movement continues to be below normal, although it is improving. Great Britain and France are taking practically all the flour exported from New Orleans. The exports of wheat from New Orleans are about 15 times greater in volume than at the same season last year, and those of oats about six times greater.

At Galveston it is reported that the supply of vessels still continues adequate for the freights that are moving. Cotton exports from that port in October were six times what they were in September, and the November shipments are showing a further increase. The wheat exports during October amounted to 4,852,330 bushels, valued at $5,471,768. An analysis of the shipping figures shows that 38 steamships carried cotton exports to trans-Atlantic ports during that month, 30 steamers were loaded with wheat, 10 with cotton seed and 5 with cotton cake. The destination of the majority of these steamers was Liverpool, most of the remainder being bound for Denmark, France and Italy.

Traffic via the Panama Canal was temporarily interrupted twice in October and early in November by earth slides in the Culebra cut, but in each instance the obstructions were cleared away rapidly, and shipping through the Canal suffered no marked interruption.

Between October 24 and November 18 the following foreign-built vessels were registered under the American flag in accordance with the act of August 18, 1914:

Rig.	Name of Vessel.	Gross.	Mat.	Home Port.	Former Nat.
S.S.	Robert Dollar	5,356	Steel	San Francisco	British
Bkn.	*St. Paul	471	Wood	Mobile, Ala.	British
S.S.	*Cushing (tanker)	6,894	Steel	New York	German
S.S.	†*Steaua Romana (t)	5,275	Steel	Philadelphia	Roumanian
S.S.	†*Colusa	5,732	Steel	New York	British
S.S.	†*Oregon	727	Steel	New York	Norwegian
S.S.	†*Cacique	6,202	Steel	New York	British

Total to November 18: 85 vessels; 303,206 gross tons.
* Indicates passenger vessels.
† Indicates provisional registry through American Consul.

A CLUB FOR OVERSEA TRADERS

New York's India House is a New Gathering Place for Men Interested in International Trade

NEW YORK CITY'S oversea trade is vast—almost equal to that of London—and an army of merchants and men of finance are interested in it; but until lately there was no club or gathering place that was especially dedicated to them. Recently there has been established, in the heart of the city's most ancient and least changed business section—the quarter that was once the center of the maritime trade in the days of the clipper ships—a club, called India House, that is especially designed to meet the needs of those connected with international commerce.

Business men from all parts of the country who are constantly called by their foreign affairs to the nation's greatest port, and manufacturers looking to foreign markets, exporters, importers, merchants seeking business abroad, bankers who finance foreign transactions, steamship men, engineers engaged in enterprises abroad which should create an increasing market for American products, and railroad men who realize the importance of the export trade to their carriers, will be among its guests and members.

India House occupies an entire building, facing Hanover Square. It was once the home of W. R. Grace & Co., famous for their long connection with the South American trade, and before that was the site of the New York Cotton Exchange. It was erected more than a century ago, but its stately architecture, in its remodelling, has lent itself effectively to the purposes for which it is now to be used.

The name, "India House," is of ancient origin. "The Indies" was long the accepted generic term for foreign

"India House," a picturesquely situated New York club just opened for international traders

enterprise, and the discovery of America was the outcome of such a project. East India House, in Leadenhall Street, London, was a cradle of British commercial success and power, and has a permanent place in English history and literature. At Salem, Massachusetts, still stands East India Marine Hall, as a memorial to the American merchants and mariners who traded with the Far East in days gone by.

The purposes of this new organization are more than local—they are international. It aims to collect and disseminate the latest information regarding foreign markets, and to be of practical service to its members and guests as well as being a convenient place for their meetings and luncheons and the interchange of news and opinions.

WAR AND IMMIGRATION

The Effect that the Present Conflict May have on Europe and America

PROBABLY in nothing else was the effect of the war more marked and instantaneous than upon American immigration. The influx of immigrants from Germany and Russia ceased as soon as the ships that were afloat when war was declared had landed their cargoes; that from Italy, Spain, Portugal and England still continues, but in very diminished volume. All in all, immigration to the United States is only about one-third as great as it was a year ago.

"When the war is over," recently said the United States Commissioner of Immigration at Ellis Island, the great landing depot for America, "each country will offer greater inducements than ever to keep its citizens at home. The great wars of the past have been followed by periods of depression, following the wholesale destruction of wealth and the means of producing it. There will be a vacuum which it will require every effort to fill, and the Governments will see to it that their populations are kept at home to assist in the work."

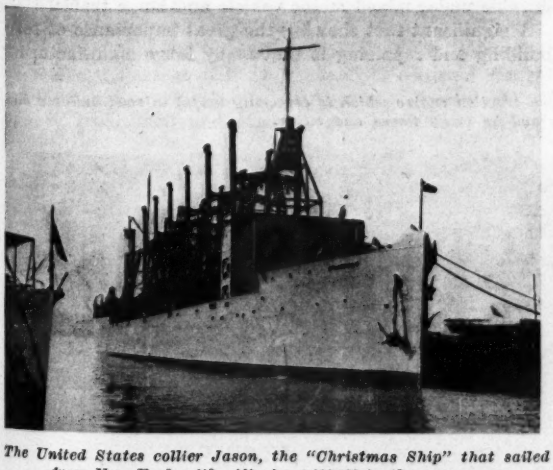
It has been pointed out by economists who have been studying the results of the present war that one effect will be to cause a marked increase in the scales of wages paid in all industries in Europe, which will bring about a noticeable increase in the prices of all manufactured goods produced there. In the United States, however, there is little likelihood of any such advances in the costs of production. Whatever tendency there may be in this direction will be counterbalanced by the influx of a considerable population from other countries, despite every effort that can be made to restrain it.

It is impossible to forecast, as yet, with any degree of accuracy, however, what shiftings of populations will occur after the great war is ended. The territories gained and lost by the combatants will decide that in a large degree. But that many thousands of Europeans eventually will find new homes in either North or South America seems to be almost certain.

AMERICA'S GIFTS TO WAR SUFFERERS

Two Steamers Leave New York with Cargoes of Food and Clothing for the Destitute

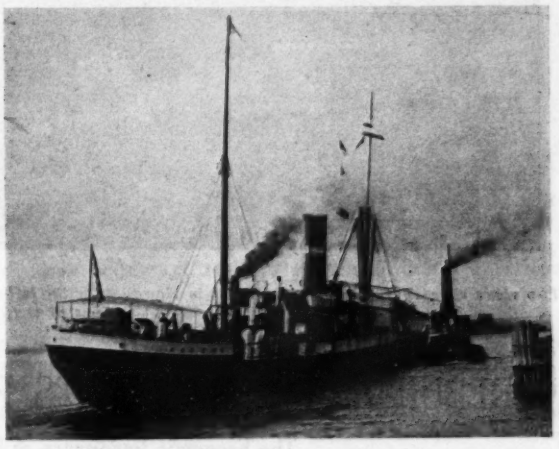
TWO large steamers left New York during the first half of November on noteworthy missions. One was the *Massapequa*, which sailed on the 3d, bound for Rotterdam



The United States collier Jason, the "Christmas Ship" that sailed from New York with gifts for 5,000,000 in the war zone

with a $275,000 cargo of foodstuffs for the destitute people of Belgium; the other was the United States collier *Jason*, which left on the 14th, loaded with Christmas presents for the orphans, widowed and wounded of the warring nations of Europe.

The *Massapequa* was the relief ship sent by the Rockefeller Foundation, a philanthropic organization devised some years ago for the purpose of rendering available for immediate use, whenever needed for charity or benevolence, considerable sums of money. The endowment of the Foundation, which was furnished by Mr. John D. Rockefeller,



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The Rockefeller Foundation's relief ship, Massapequa, that took 4,000 tons of provisions to Belgium

amounts to many millions of dollars. The executive head of the organization is Mr. John D. Rockefeller, Jr.

The first cargo was sent to Belgium as it seemed that the need of immediate relief was the most pressing there. The Rockefeller Foundation is understood to be negotiating for the charters of at least two other ships to take cargoes of food supplies to the destitute in the war zones of Europe, and has arranged to provide a steamship pier in New York Harbor and to charter as many steamships as may be needed to transport all the food supplies that the people of the United States contribute to the relief of war sufferers.

The idea of the Christmas ship—which found its concrete expression in the *Jason*—was fostered by more than 200 American newspapers. The cargo, which was contained in 10,000 large packing cases and a similar number of smaller packages, was contributed by individuals all over the United States. It is estimated that these gifts will be sufficient for at least 5,000,000 persons. Only a comparatively small part of the merchandise was toys. There were fourteen freight carloads of children's clothing, one carload of men's clothing, five carloads of women's clothing, and a vast quantity of food, shoes and miscellaneous goods.

The ship made its first stop at Falmouth, England, where the presents for the Belgians and the English were unloaded. The port for France was Marseilles, and Genoa the distributing point for Germany and Austria. The gifts for the Servians went via Saloniki.

There are various other relief funds being raised in the United States. By the middle of last November the total of the money contributions received for the principal ones was about $2,000,000, and gifts were pouring in at the rate of $100,000 a day. In six relief funds alone, on the above date, the receipts had exceeded $1,200,000. These organizations were: the Belgian Relief Fund, Red Cross, German Relief Fund, American Hospital (Paris), Prince of Wales Fund and the Swiss Fund. Those in charge of these funds state that they have received contributions, not only from all parts of the United States, but from many other countries—showing that sympathy with the non-combatant sufferers from the great war is world-wide. Contributions to the Belgian Fund may be sent to the Belgian Relief Committee, 8 Bridge Street, or to J. P. Morgan & Co., 23 Wall Street, New York; and those to Red Cross Fund may be sent to Jacob H. Schiff, 52 William Street, New York.

Courtesy of the Hawaiian Promotion Committee

Two views showing well constructed roads in Hawaii. On the left the Nuunanu Pali road six miles from Honolulu; on the right two sections of the road down the Pali

REBUILDING THE WORLD'S ROADS FOR THE MOTOR CAR

The Economic Importance of Modern Highways and the Growing Use of Machinery in Constructing and Repairing Them

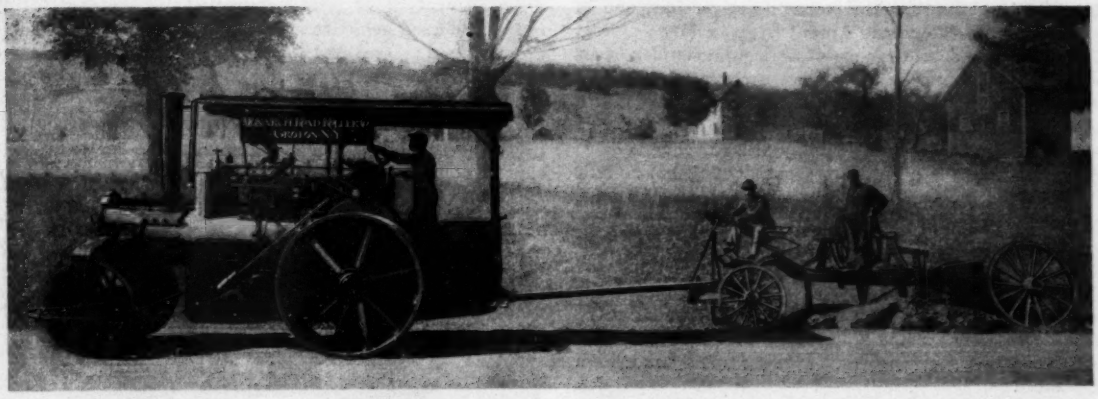
Illustrated by Photos Loaned by Carr & Tyler, New York

IT is frequently asserted that, next to the inventors of the alphabet and the printing press, the greatest benefactors of mankind have been those who have improved the means of communication. While this no doubt refers to such epoch-making inventions as the locomotive and the steamship, it is also true that the builders of good roads are important benefactors in any country, especially since the development of power traction has increased traffic many fold. Prior to the introduction of the automobile there was little long distance traffic over highways because of the slow means of transportation and the poor condition of the road bed. These conditions changed rapidly after the auto became firmly established. In 1912 two-thirds of all the traffic on all State roads in Massachusetts and Connecticut was motor-driven, and it is estimated that the number of machines on all the highways in the United States was a round million. There is evidence on every hand of the enormous increase in every phase of automobiling in this country. Road traffic has increased accordingly, both as regards pleasure and commercial vehicles.

The great problem to-day is how these roads may best be constructed and maintained. The kind of road which satisfied traffic needs fairly well a few years ago will not sustain the mixed traffic of horse-drawn vehicles, automobiles and motor trucks. The dust which is ground off the road by the iron shoes of the horses and iron tires of wagon wheels and which is needed to cement the fragments of stone together is sucked up by the swift autos and blown away. The road surface then quickly ravels and, unless repairs are made promptly, water collects in the holes and softens the base of the road so that heavy trucks break through. The improved water-bound macadam roads have not withstood the action of the automobile and are being replaced by bituminous-bound macadam, concrete, brick and wood-block roads. There has been an increase in the cost of highway construction, repair and maintenance, but the improved roads are at present sustaining an amount of traffic several times greater than they were ten years ago, and the cost of highways per unit of travel has probably not increased. As a matter of economy, therefore, it is essential to build roads that will be most durable under mixed motor vehicle and horse traffic.

A significant fact showing the great importance of road building and repairing is that many large manufacturing

A small portable crushing plant driven by a 10-ton combination roller and traction engine which is especially useful in road building and repairing—used both by contractors and by many towns and cities



A modern road machine drawn by a steam roller as tractor. The offset pole enables the tractor to keep the center of the road while the machine is working on the edge

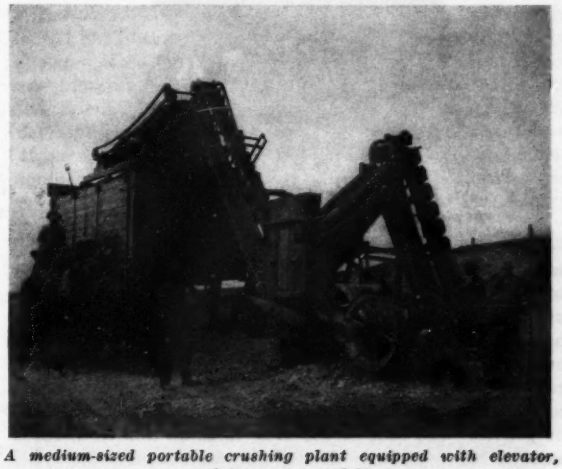
concerns in the United States are making only this class of machinery. The reversible road machine is a common type of the many different kinds which are put on the market. This machine is designed especially for use on common dirt roads. When it is recalled that about 90 per cent. of all roads in America are of that character, some idea of the importance of this type of machine can be gained. When road machines were first introduced the heavy reversible kind was the only one in general use. It was then the practice to grade the dirt roads in the spring and leave them untouched for the next twelve months. The improvement was short-lived and the highway speedily relapsed into its original condition—a miserable dirt road.

The persistent and widespread agitation for improved roads during the last few years has borne fruit, and to-day there are many different kinds of road machines. In the spring of the year the heavy reversible type is used to cut out ditches and scrape off the shoulders. Later in the season, when the roads become rutted and need to be trued up, a lighter type of machine is employed because only two horses are needed to draw it and no great amount of earth has to be moved.

A very useful attachment, which can be fastened to a road machine, is the scarifier. This is employed for loosening or tearing up the surface of a worn gravel, stone or hard earth road. With the increasing demand for improved hard-surface roads, such a machine is of the greatest value. By means of hand wheels and the lifting mechanism the road can be loosened, and at the same time the material spread so that the surface is level and true. Then it is an easy matter to replace the scarifier with a mould-board and shape the road properly.

In the building or repairing of macadam or stone roads —and the extent of these is rapidly increasing throughout the world—rock crushing plants are in general use. They are economical and efficient, and have been one of the most important features in the growth of the modern highway.

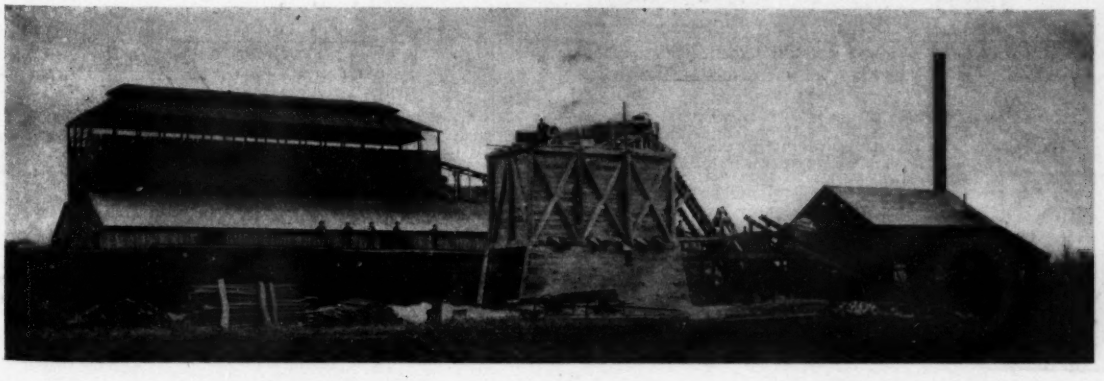
The first rock crushers in this country were crude and massive affairs and could be moved about only with considerable trouble and delay. To-day there are many different types of crushers adapted to meet a variety of needs. The semi-portable plants intended for large operations are equipped with an elevator to carry the crushed stone from the crusher to the revolving screens where it is sorted and dropped through into bins. Where it is desired



A medium-sized portable crushing plant equipped with elevator, revolving screen and bins

to install a crusher permanently in a large quarry the portable features can be removed quickly. In many cases, however, stone is distributed at different points along the line of the road that is to be built or maintained. Experience has shown that it is always cheaper to move the

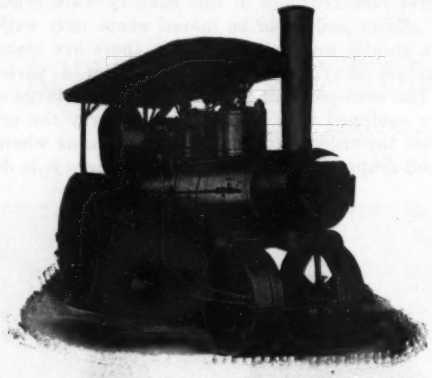
For extensive road building operations the same type of machinery is used in larger plants of a permanent character, which serve as rock supply bases for a large surrounding area



crusher to the stone than the stone to the crusher, and in this class of work the portable plant effects a large saving.

Every effective device for maintaining the simpler types of roads is of the utmost importance because of the great percentage of highways that have not been improved with hard surface. For example, of the more than 2,000,000 miles of public roads in the United States, only 200,000 miles have been given a hard surface, and of these one-half are surfaced with gravel. By far the cheapest and most efficient apparatus for soft roads is the simple road drag. The effectiveness of this machine, however, is lost unless the road has been put in some sort of condition beforehand and has been drained and crowned. The first road drags were made of split logs. These have been replaced by the up-to-date drags of many different kinds. They are of all-steel construction, the blades being of special high carbon steel.

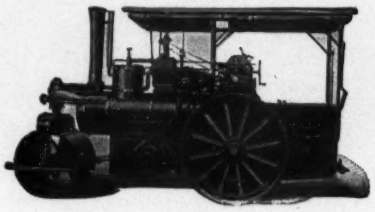
The road drag should be used with good judgment to achieve the best results. It may prove very destructive if employed at the wrong time or under improper conditions. When a road is hard and dry a drag will only make it worse and raise more dust. The proper occasion for its use is when the material composing the road surface is sufficiently moist to compact readily under traffic after it has been moved by the drag, and yet does not contain sufficient moisture for the traffic following the drag to produce mud. It is well adapted for producing a smooth and uniform surface on newly constructed roads of earth or gravel. The cost of the drag is small and no cheaper method has ever been devised for maintaining the types of roads for which it is well adapted.



A double cylinder, steel geared traction hauling engine, showing rear driver, belt pulley and heavy boiler

One of the most efficient and useful road building and repairing machines is the combination roller and traction engine. Because of the increasing difficulty of securing good teams when needed, the lower cost of steam power and the better control obtained, this engine is the ideal motor for this sort of work. It was devised especially to lower the high cost of making and maintaining country roads. Such an engine will do a variety of work. It will roll roads, drive a rock crusher or other heavy machine and draw every type of road apparatus. Its general utility makes it a good investment for any community where there are both stone and dirt roads. In brief, the outfit is a power plant, a hauling engine and a steam roller all in one.

The use of the engine to run a temporary crushing plant is comparatively simple and very effective. A belt is connected from the crusher to the fly-wheel on the traction engine, and the power is transmitted directly in that way.

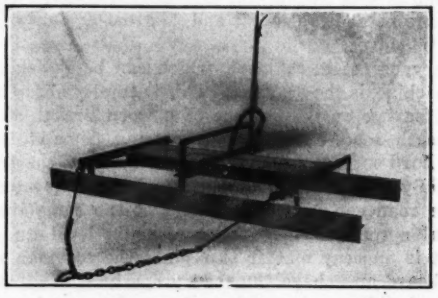


A ten-ton steam road roller which is a necessity in road building and repairing

Such an outfit is especially advantageous for building or repairing roads in a locality which has its own quarries.

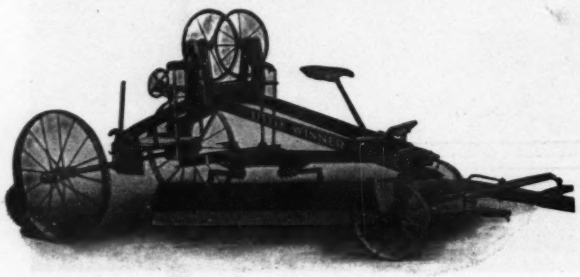
With very little trouble the steam roller can be converted to a traction engine or *vice versa*. When the machine is to be used for hauling, cleats are bolted in the rear drivers, the two middle front rolls are taken out and an anti-skid band is bolted to each outside front roll. The ease with which this machine can be changed to suit the character of the work to be done, as well as its effectiveness when converted, makes it invaluable in the upkeep and improvement of highways.

The foregoing brief discussion of some of the more important types of road building and repairing machines will give an idea of the present trend in this line and show how the increasing demand for better ways of communication throughout the world is being met. Efficient machines have been devised for every requirement. To-day it is possible for any community to have good roads with far less effort and expense than ten or fifteen years ago. The abundance of such excellent machinery for road building is in itself an incentive toward the prompt meeting of the obvious necessity of better highways.

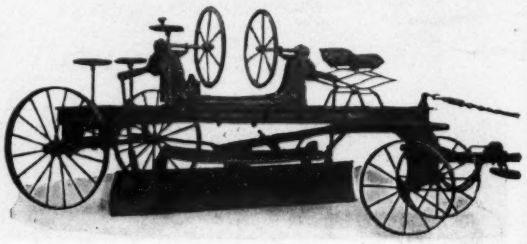


The all-steel road drag is an economical and effective device for the up-keep of roads

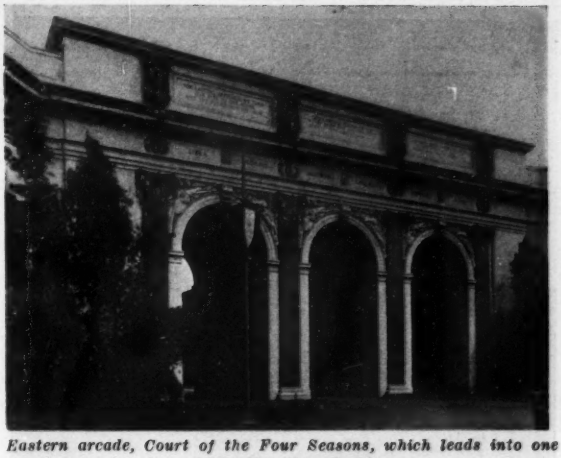
A light reversible road machine which is suitable for smoothing, leveling and grading dirt roads



A type of road machine for dirt roads designed for heavy work and drawn by a tractor



A colonnade in the Court of the Four Seasons, which will be of great architectural beauty



Eastern arcade, Court of the Four Seasons, which leads into one of the Venetian Courts

PROGRESS OF THE PANAMA-PACIFIC EXPOSITION

Construction of the National Pavilions Advancing Rapidly— No Foreign Nation has Withdrawn from its Participation

By Hamilton M. Wright, San Francisco—All Photos Reproduced by Courtesy Panama-Pacific Exposition

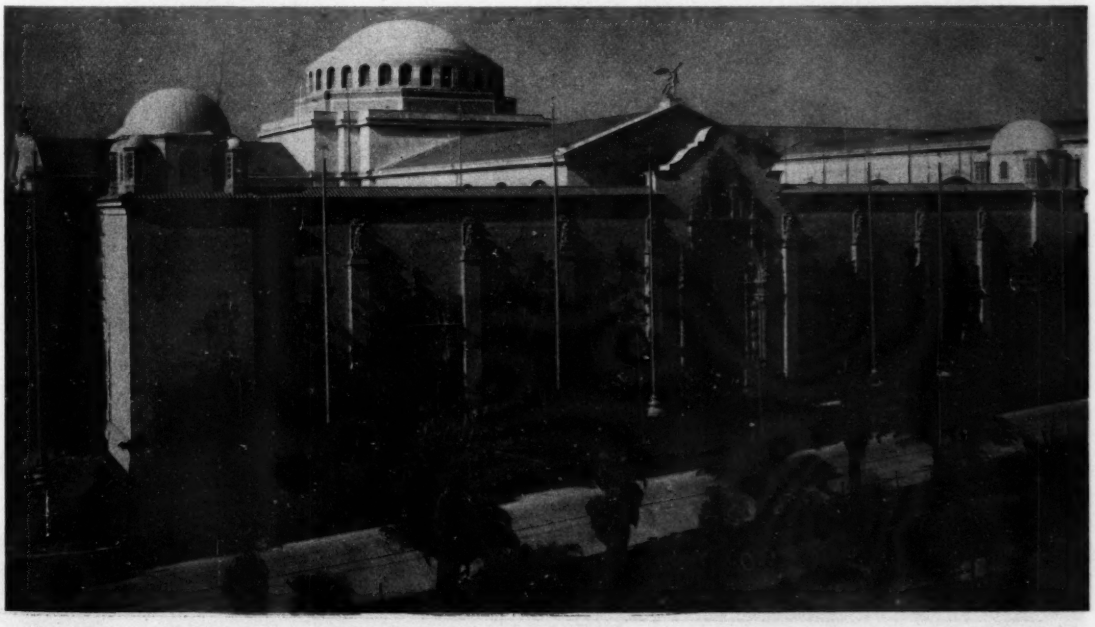
AT the time this article is written, more than three and one-half months before the opening of the Panama-Pacific International Exposition on February 20, 1915, it is possible to declare, upon the authority of notable experts in the conduct of preceding universal expositions, that no world's fair has ever reached so advanced a stage in its construction and general preparation, nor has any been assured of so great a degree of participation by exhibitors at a similar period before its opening.

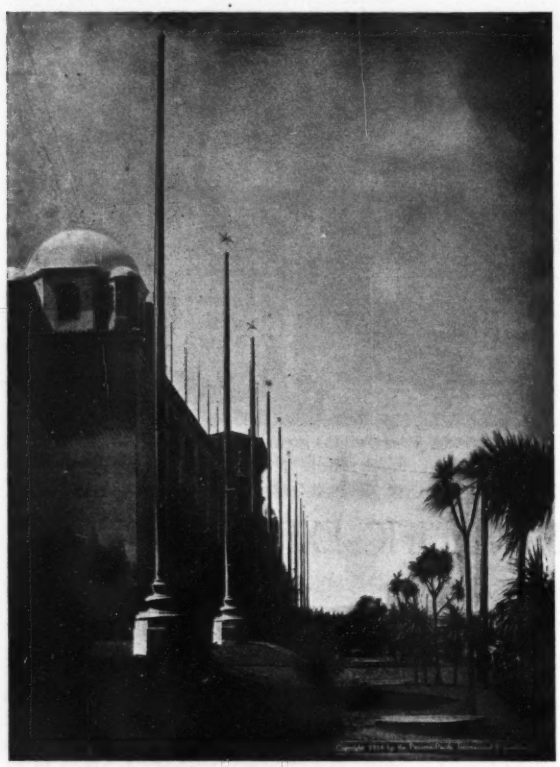
Forty nations and forty-four States and Territories will be officially represented at the exposition.

Very shortly after the outbreak of the European war the management of the exposition announced that, under no circumstances, would it be postponed. This decision was impelled by many reasons. In the first place the exposition was at that time—six months before the opening—more than ninety per cent. completed. It was assured of so extensive a degree of participation that had all nations involved in the war, and which had agreed to take part, withdrawn their participation the total loss in the displays would have been but six per cent. of all the exhibits to be shown. Moreover, the exposition, assured of a very large and comprehensive participation from South America and the Orient, afforded an extraordinary opportunity for the development of whatever trade alignments might follow as the result of the opening of the Panama Canal and of the conflict in Europe. Even in the warring countries the opinion was expressed that it was even more necessary than ever that every effort should be made.

The decision was not, however, based solely on commercial considerations. The exposition, from its inception, was undertaken as a great patriotic enterprise, and, at the time of the outbreak of the conflict, assurances of interest and support poured in upon the management from every

The Avenue of Palms, which forms the northern boundary of the beautiful Alameda, and the south facade of the Palace of Varied Industries





Palace of Mines and Metallurgy, which faces the Avenue of Progress on the East

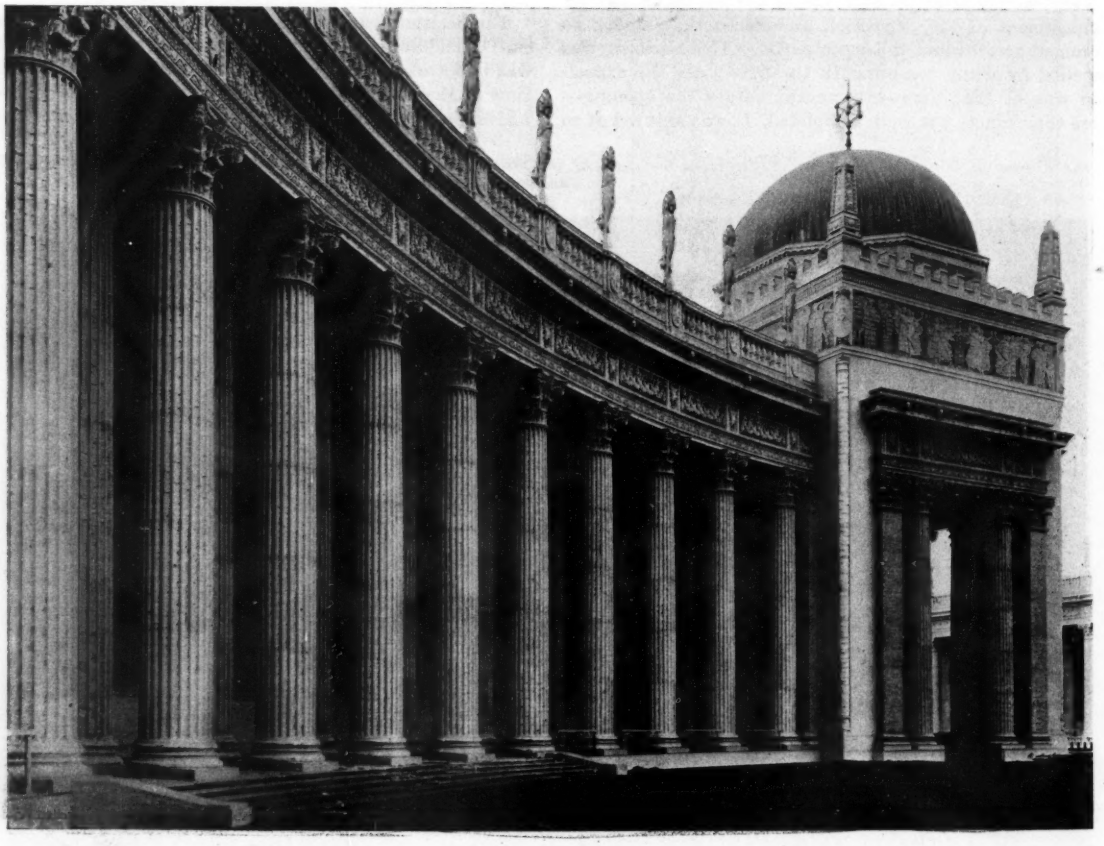
Colonnade of the Court of the Universe—the great central court of the Exposition

part of the globe. Even from the nations engaged in the conflict came expressions of the hope that under no consideration would the exposition be postponed.

The wisdom of that early decision has long since been confirmed. None of the nations which had agreed to participate withdrew owing to the war, and a number even increased their funds for that purpose or asked for increased space for their displays. Though it became evident that there would be some losses in promised exhibits from the countries at war, it was found that these losses would not include by any means all of such displays, nor even the most important or valuable of them, and that there were many compensating gains in other directions which more than made up for the losses. The total of the funds appropriated by the participating countries toward the exposition actually increased. Three nations, shortly after the outbreak of the conflict, formally decided to take part; three increased their funds for participation, and a number asked for and received increased exhibit space.

As the roster now stands Norway, Sweden, Denmark, Portugal, Spain, Holland and Italy are among the European nations that will be represented officially; many English and German industries will be shown, and while France may not exhibit officially there are a number of entries from that country. The French Government has accepted the invitation to participate and has sent word that it still hopes and intends to do so.

Early in October the first shipment of exhibits reached San Francisco from Holland. This comprised five carloads of rare bulbs and plants gathered by the Government commission in each of the provinces of The Netherlands. Shipments during the same month were also received from Luxemburg, from Ireland and from France. A large consignment of exhibits from London were installed in the Palace of Mines. Five carloads of social economy exhibits, including wax and glass models illustrating hygienic improvements in factories, made under the supervision of the celebrated Dr. Philip Rauer of Stuttgart, reached the city. Two shipments aggregating more than 1,100 tons of exhibits and materials for the Japanese displays and



pavilions arrived in October. By the end of that month a total of more than 160 consignments had reached San Francisco.

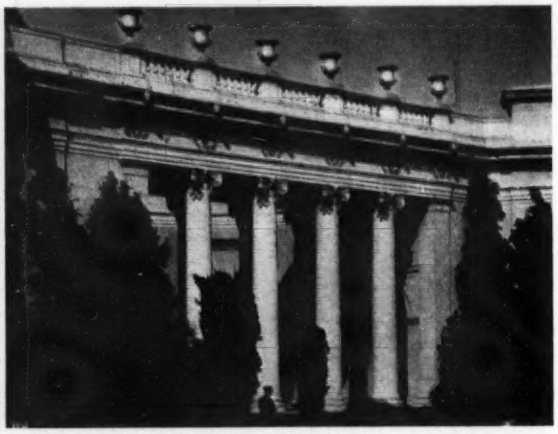
Between 70,000 and 80,000 tons of exhibits, ranging from sections of buildings, heavy engines and locomotives to the most delicate crockery and works of art, will be handled by the exposition up to the time of its opening on February 20. A 1,700-ton building was recently moved from the wharves of one of the trans-Pacific transportation companies to the exposition grounds by the traffic department. Displays are consigned directly from the place of shipment to their respective destinations in the building where they are to be shown, and exhibitors are thus relieved of any further concern until they are ready to be unpacked and put in order. It is conservatively estimated that more than $5,000,000 will be paid in freights upon the domestic exhibits alone. This represents transportation charges one way—to San Francisco—on traffic originating in the United States on which the full rate is charged from the shipping point to the exposition. The return carriage is free.

Twenty tons of articles of domestic art recently left Sweden for installation in the exhibition palaces. These came from the international exposition at Malmö, Sweden, in which Denmark, Germany, Russia and Finland also participated. In this display are specimens of embroidery, quilting, lace-making, tapestry, weaving, wood-carving and keramics, all done in the homes of the people; working models of electric power stations in northern Sweden, of locomotives and steamships, samples of porcelain and glassware, paper, paper pulp, fancy cutlery, matches, books, gold and silver jewelry and vessels, and specimens of other industries. These will be followed by still larger consignments which are expected to arrive before the first of the year.

The construction of the Australian pavilion is progressing rapidly. Australia's participation in the exposition will be more extensive than was planned before the outbreak of hostilities in Europe. The pavilion, occupying 200 by 140 feet, contains a great exhibition hall 170 by 90

Entrance to Palace of Food Products—the material of this doorway resembles old carved ivory

Door to the Palace of Manufactures and towers above the entrances to the Court of the Universe



Above, a picturesque corner of the Court of the Four Seasons; below, vestibule of the Palace of Machinery

Colonnade leading from the Court of the Four Seasons to the Marina, or Grand Esplanade (below)

feet, with two annexes. Aside from the elaborate industrial exihibit, there will be a botanical display of high educational value.

The beautiful Bolivian pavilion, covering an area of 100 by 102 feet, is practically completed. The architecture is based on the work of Chirriguerra, founder of the mission style and builder of the famous church of San Diego at Seville; its courtyard is fashioned after that of the old mint at Potosi, erected in 1773.

The great task of collecting and transporting exhibits for New Zealand is going forward steadily. Surrounding the exquisite New Zealand pavilion, which occupies an area of 110 by 45 feet, will be many varieties of the 130 different tree ferns which form the only vegetation over immense areas of that colony.

The beautiful Hawaiian pavilion is almost completed. Pineapples, sugar, the rice industries, alligator pears, mangoes, rose apples, mountain apples, guavas, lemons and melons will be shown on an extensive scale; the cultivation of coffee, cotton and tobacco will be illustrated, and the romantic phases of Hawaiian life will be portrayed.

An elaborate collection of native products has been assembled in Teheran and is ready for shipment. The Persian commissioner, who has the display in charge, has already reached the United States. The exhibit will consist of blooded horses, cats and other fancy stock, food products, tobacco, fabrics, etc.

The great Turkish building is almost completed and 100 Arabian horses, assembled by the Turkish Commissioner, are now ready for shipment to San Francisco.

The Argentine pavilion is now about one-third completed. While this building will be devoted to ceremonial functions and receptions to visitors from all parts of the world, this republic will also have elaborate displays in all the principal exhibition palaces. More than 5,000 exhibits have already been assembled and are ready for immediate shipment.

The first consignment of Chinese displays has already reached San Francisco, and it is expected that the Chinese exhibits, gathered under the supervision of the governors of the provinces of central and northern China, will be unsurpassed in their quality and extent. They will include a comprehensive display of live stock and machinery, a

wonderful exhibit of rare silks, teas, Chinese works of art, silversmithing, inlay and filagree work.

The beautiful Cuban pavilion, in the Spanish Renaissance style of architecture, is almost completed. Cuba is one of the many nations which has increased its participation since the beginning of the European war. In addition to an elaborate exhibit of Cuban tobacco factories and plantations, a special effort will be made to portray attractively the charms of Cuba for the tourist and traveler.

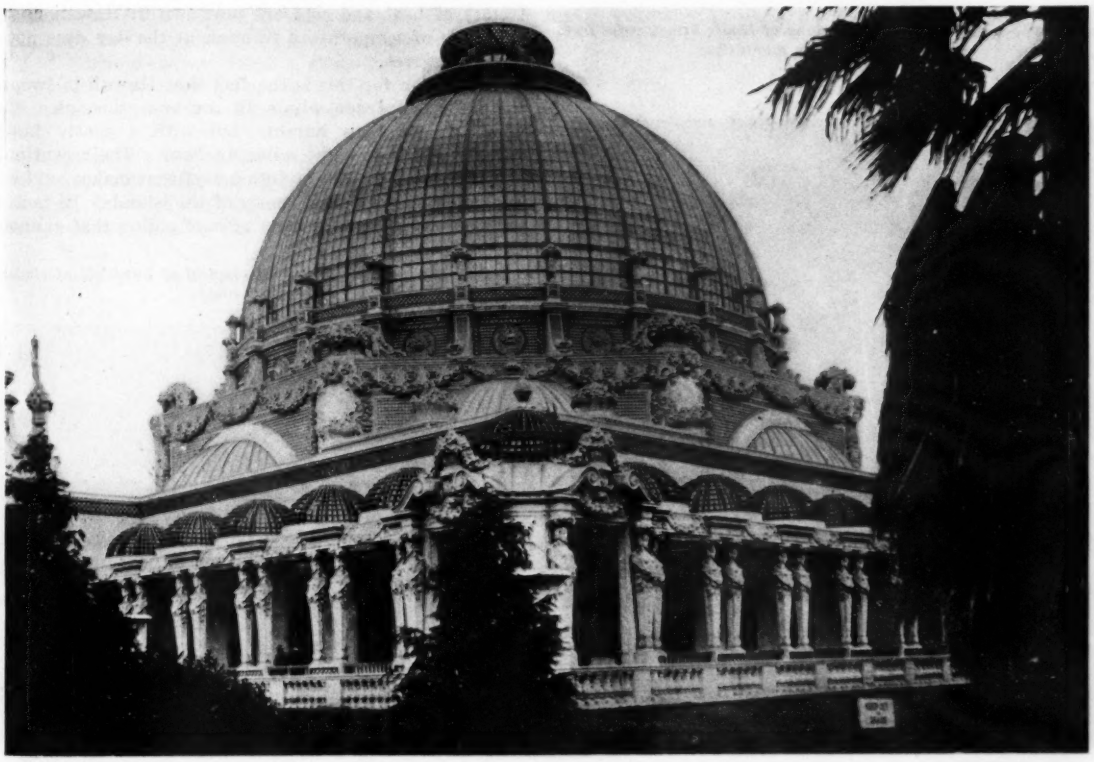
The Philippine building is 87 per cent. completed and it is expected that it will be turned over to the commissioners of the Philippines by November 30. The building covers an area of 4,500 square feet, having two wings, each 248 feet long and 40 feet wide. More than 615 different varieties of timber were brought from the Philippines for this building; sixteen columns of palma brava support the portico which forms the main entrance. Among the features of the Philippine display will be the exhibit of priceless orchids. More than 3,500 of these handsome flowers, embracing 65 varieties of great beauty and many of great rarity, have already reached the exposition grounds. The educational development of the Philippine Islands and the teaching of native children will be exemplified on an elaborate scale.

Construction will soon begin upon the Japanese pavilion, the materials for which have been brought from Japan. It is promised that this structure, reproducing an historic temple more than 1,000 years old at Kioto, will be completed to the last detail before the opening of the exposition.

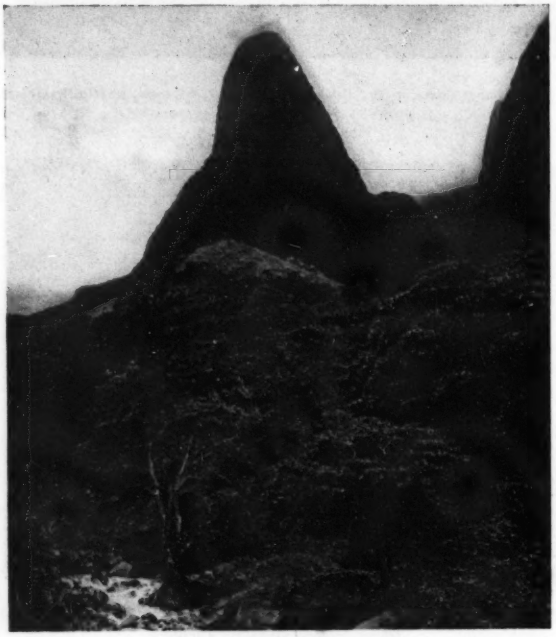
The official announcement of the details of the Japanese display indicates that it will be the most magnificent Oriental exhibit ever shown. The Government exhibits of Japan will show the special and peculiar civilization of the Empire, its modern development and customs. The Japanese Department of Agriculture and Commerce is giving special attention to a display of the silk industry. The Bureau of Forestry will make an elaborate showing of the various bamboos; the Bureau of Mines will have a model of the eruption of Sakurajima, the greatest volcanic outbreak of recent years; the Department of Communications will have models of the two oldest battleships of Japan. One of these models is 147 feet long, 54 feet wide and 11 feet deep. The original was propelled by 100 oars.

Above, half dome in the Court of the Four Seasons, with allegorical figures; below, western entrance

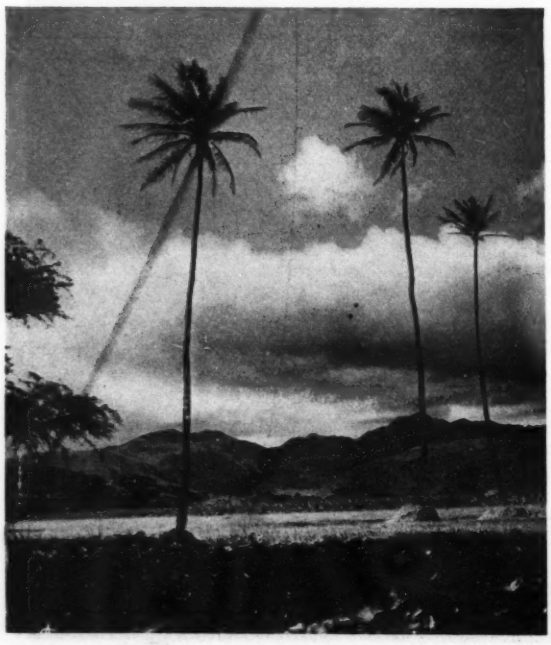
The Palace of Horticulture, with its glass dome 182 1-2 feet high and 152 1-2 feet in diameter (below)



The City of Honolulu from the waterfront, showing the picturesque highlands of the Island of Oahu



Above, "The Needle," Iao Valley, Island of Maui; below, palm trees on a rice and banana plantation



THE CENTER OF THE

The Hawaiian Islands are Situated at the In-

Illustrated with Photographs Loaned by the Ha-

"NO alien land in all the world has any deep, strong charm for me but that one; no other land could so longingly and beseechingly haunt me sleeping and waking, through half a lifetime, as that one has done. Other things leave me, but it abides; other things change, but it remains the same. For me its balmy airs are always blowing, its summer seas flashing in the sun; the pulsing of its surf beat is in my ears; I can see its garlanded crags, its leaping cascades, its plumy palms drowsing by the shore; its remote summits floating like islands above the cloudrack; I can feel the spirit of its woodland solitudes; I can hear the splash of its brooks; in my nostrils still lives the breath of flowers that perished twenty years ago."

In these eloquent words, with their evident ring of sincerity, Mark Twain, the great American humorist, once expressed his appreciation of Hawaii. At the present moment, when the vacation resorts of Europe are closed to the traveler, Hawaii offers attractions to the tourist that will compensate in many ways for the loss of the playgrounds across the Atlantic. With a climate like that of the Riviera all the year around, and the same blue sky and sea, there are few lands that are more delightful. Extremes of heat and cold are unknown in Hawaii and the variation of temperature throughout the day does not exceed 10 degrees.

One reason for this is the fact that Hawaii is swept by the northeast trade winds all the year through. These winds do not blow harshly, but with a gently fan-like velocity of about eight miles an hour. Their continuity, however, piles the sea up into a surf that makes surf boating one of the principal sports of the islands. In fact, the natives have devised a form of surf riding that cannot be

Moana Lua Gardens, Honolulu—typical of hundreds of similar beauty spots

Haleiwa Hotel, 55 miles from Honolulu, on the round the island automobile route—an attractive tourist resort

THE PACIFIC

tersection of all Leading Trans-Pacific Routes

the Hawaii Promotion Committee

seen anywhere else, and is a source of endless interest to visitors.

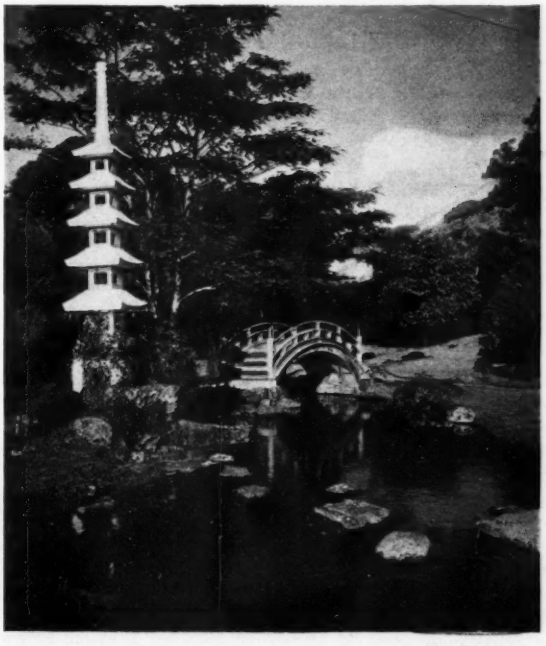
There are few parts of the world in which nature has been more lavish in its scenic displays. On the island of Hawaii, situated about a day's journey from the capital city of Honolulu, are located the famous volcanoes of Kilauea and Mauna Loa. The crater of the former is 7¾ miles in circumference, with an area of 4¼ square miles, while the summit of Mauna Loa, at whose crest is the still active crater of Mokuaweoweo, is 13,675 feet above the sea. Another natural wonder of great interest is the extinct crater of Haleakala, on the Island of Maui. The name of this great mountain means "the House of the Sun" and its crater is the largest in the world, being 7½ miles across at its greatest width and somewhat more than 20 miles in circumference. At its highest point the rim of this bowl is 10,032 feet above the sea, while the bed of the crater is 2,500 feet below. On one of the flanks of this mountain is the valley of Kipahulu where the trail drops 8,000 feet to the sea level through a narrow canyon threaded by a stream which tumbles over a score of waterfalls.

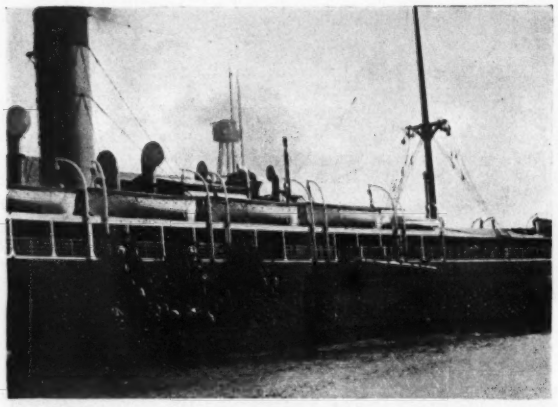
On the island of Oahu, which contains the capital city of Honolulu, one of the most interesting natural features is the Nuuanu Pali, a great cliff at the eastern end of the valley of Nuuanu, which drops a sheer 1,214 feet. Engineers have cut a roadway up the side of this mountain, an illustration of which will be found on page 78 of this issue.

These are only a few of the many points of interest in the various islands of the archipelago, which numbers eight altogether. Of these the largest is the Island of Hawaii, which gives its name to the group, and has an area of

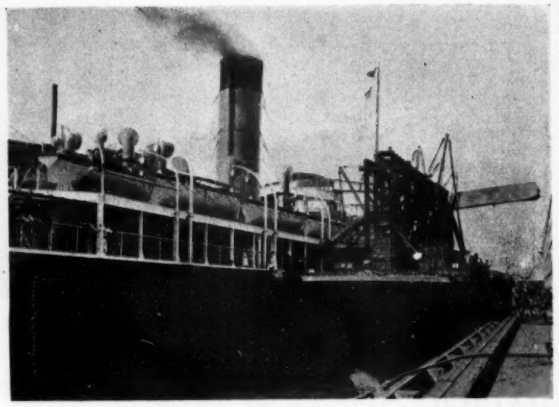
Oahu Country Club, near Honolulu, with a part of its 18-hole golf course

Above, interior of the crater of Haleakala; below, Japanese gardens at Moana Lua





Coaling a steamer at Honolulu by means of barges and an army of native stevedores



Coaling a steamer by means of an automatic coaling barge discharging 100 tons per hour

4,015 square miles. On it are the great mountains Mauna Kea, 13,900 feet in height, Mauna Loa, 13,600; Hualalai, 8,300, and Kohala, 5,500. The ascent to each of these mountains is so gradual that they lose something of the impression of great height. On the southeastern end is Hilo, the second city of the group. Maui, lying to the northwest of Hawaii, is an older island, contains 728 square miles and its chief mountain is Haleakala, 10,000 feet. Thrown off from it are Lanai and Kahoolawe, each privately owned and utilized as stock ranges. Maui is chiefly remarkable for its great valleys. Oahu, containing the city of Honolulu, the capital, has an extent of 598 square miles. On it are some of the most productive sugar plantations of the group. Pearl Harbor, the site of the coming mid-sea naval station, is ten miles from Honolulu. Kauai, the oldest island of the group, lies to the northwest. This is commonly called the Garden Isle because of its wealth of tropical foliage, and offers numerous views of great interest. On these islands there are many thousands of acres of tillable land either now in the possession of the Government or about to revert to it after leases of varying periods. Much of this land is exceedingly valuable for the cultivation of pineapples, bananas, coffee, tobacco and sugar cane.

In every part of the islands are beauty spots of rare attractiveness to the tourist, affording endless opportunities for delightful excursions in all directions. Many miles of excellent automobile roadways have been built on the various islands, and a local steamship company has frequent sailings from Honolulu to all parts of the archipelago. A number of first class hotels enable the tourist to make a protracted stay at many of the points of interest, while a country club near the city of Honolulu, and several high class golf links afford the visitor ample opportunity to be outdoors.

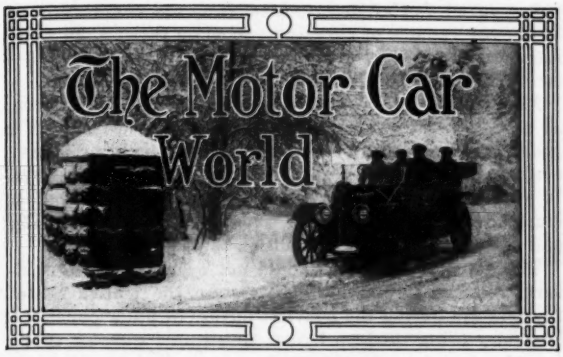
Honolulu itself is a modern, well-constructed city with numerous large hotels. It enjoys the unique distinction of having a larger number of American soldiers quartered near it than any other city under the Stars and Stripes. At present the army forces on the island of Oahu number nearly 16,000 men, making Honolulu quite a garrison town.

The port is one of great activity, being situated at "the crossroads of the Pacific," with steamship lines radiating in practically every direction. Since the completion of the Panama Canal the port has been in direct steamship communication with New York by means of the boats of the American-Hawaiian Line, one of which traverses the canal every 48 hours. The port is also an important coaling center and as this phase of its activities may be of particular interest at the present time a number of illustrations are shown of the modern coaling plant located along the Ala Moana and the waterfront, and owned and operated by the Inter-Island Steam Navigation Company. The plant consists of a cableway and three towers, together with an automatic coal barge and floating dry dock. There are two towers for unloading colliers by means of grabs situated on the coaling wharf, each of which can handle 100 tons per hour. The coal is carried in trucks along a cableway to storage yards having a present capacity of 20,000 tons, which will eventually be increased to 35,000 tons. Vessels calling for coal can go directly to this wharf, there being over 30 feet of water alongside. The coaling is done directly from storage and artesian well water can also be supplied. For vessels which do not go alongside the bunkers the automatic coaling barge is used. This has a capacity of 500 tons and discharges at the rate of 100 tons per hour. A second barge constructed along the same lines has just been put in operation. This has a capacity of 1,200 tons and discharges at the rate of 200 tons per hour.

The people of Honolulu anticipate that the forthcoming exposition at San Francisco will be of great benefit to the Hawaiian Islands by directing attention to their many attractions, and it is hoped that thousands of visitors to the great world's fair will extend their trip so as to include this wonderful tourist paradise.

It is also hoped that many who have been accustomed to spend some of the winter months in Egypt or the Riviera will give the Hawaiian Islands a visit this season.

General view of the coaling plant, automatic coal barge and floating dry dock of the Inter-Island Steam Navigation Company.



HOW NEW IDEAS BUILD BUSINESS IN MOTOR CARS

Enterprising Automobile Agents Increase Trade by Creating Motor Transportation Demands

ONE of the best ways for a motor car agent or dealer —no matter where located—to increase his business is to show people ways in which they can save or make money by using automobile transportation. Merely to suggest methods is not enough. Each possibility should be studied, and, if it proves feasible, a comprehensive and convincing plan should be worked out before presenting

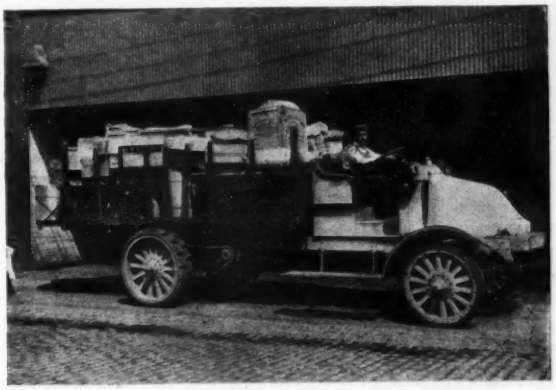
It would be hard for four horses to pull this load of shingles up such a mountain road, but it is easy for a two-ton Garford truck

the idea to the prospective purchaser. In some cases this will be easy, and in others more difficult, but intelligent effort in this direction can hardly fail to be rewarded by increasing sales.

Motor car transportation is one of the greatest single agencies in the development of any community. It is more or less of a necessity for almost every business or industry, for it lowers the cost of carrying goods and materials and also may decrease the expense of selling them. These economies of time and effort are two of the great essentials of every activity.

Automobiles are now being used all around the world—in many places, where a few years ago, no one thought of employing them. Also new methods of turning them to good account have been thought out. This tremendous expansion of the motor car's field of service has been directly due to the energy and intelligence of automobile dealers in seeking out and creating new trade. In this work they have been aided in a great degree by the American manufacturers whose cars they handle.

The American manufacturer of automobiles has certain advantages over his competitors in other countries. One of these is that the topography of the United States is so varied that the motor car can be tested by actual use under a wider range of conditions than can be found elsewhere. Manufacturers vie with each other in competitions which disclose the relative endurance, durability and economy of their cars in long runs over difficult roads. Many of these tests have had as their principal feature a trip across the North American continent—more than three thousand miles, in which several mountain ranges have to be crossed and all sorts of roads traversed. The lessons learned in this way have resulted in the steady improvement of practically every detail of the machines—not only the strictly



Merchandise distribution problems are being solved by such machines as this three-ton Kelly-Springfield motor truck

mechanical features, but those that contribute to the comfort of the users. These continual betterments have been of incalculable value to the agents and dealers handling these cars.

But motor transportation has not yet reached its fullest development, even in places where the automobile has been long in use. The wide-awake dealer may get some helpful suggestions for increasing his own business from a perusal of some of the ways in which concerns in the United States have found the motor car useful. They are typical examples of only a few of the lines in which new business has been originated.

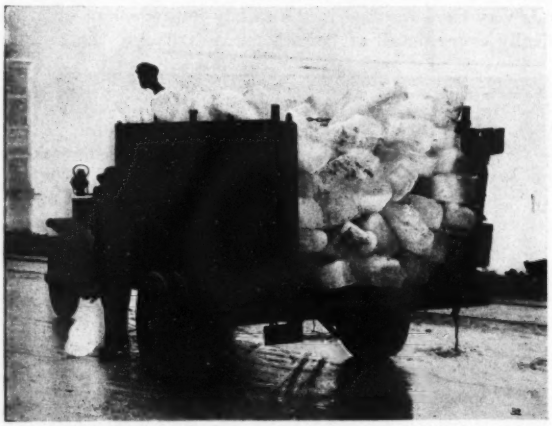
Some large commercial firms, having large investments in real estate and buildings used for stables for their

This 35-passenger Gramm motor truck is used by a real estate dealer in Montreal, Canada, to show properties to prospective clients

horses, have been induced to change to self-propelled vehicles by being shown that a garage would take up far less space, that it could be further from the center of the city—with consequently cheaper ground rent—and that the turnover from horses to motors could be made, not only without increased cost, but at a profit. Horse equipment requires from three to five times as much space as that necessary for motor vehicles, and the sale of the surplus real estate that is no longer needed often brings enough to more than pay for the power transportation equipment.

In some cities men experienced in the best methods of motor delivery contract to deliver all the merchandise of

several retail establishments that do not compete with one another. These men, as a rule, proceed by forming a stock company to purchase and operate as many electric or gasoline machines as may be required. Such enterprises have proved profitable under capable management.



Ice dealers find such motor vehicles as this 3 1-2 ton Gramm truck indispensable for delivering their product, especially in warm weather

There is practically no limit to what can be done in organizing systems of motor transportation to displace the horse. Often a man, encouraged by an automobile dealer who has showed him the manner in which the business could be handled, has started with one power vehicle and has added to his equipment until he has a considerable fleet for the carrying of passengers or freight, long distances or short hauls.

Traveling salesmen, especially those who have to visit a number of small towns, have found the automobile indispensable. It has been found by actual experience that a territory, which, traveling by rail, it takes six months to go over, can be covered in three months by using a small automobile, thus doubling the salesmen's efficiency. Physicians are among the largest users of automobiles, not only in city practice, but in the country. One American motor car company states that about one-third of all cars it sells each year are used by doctors.

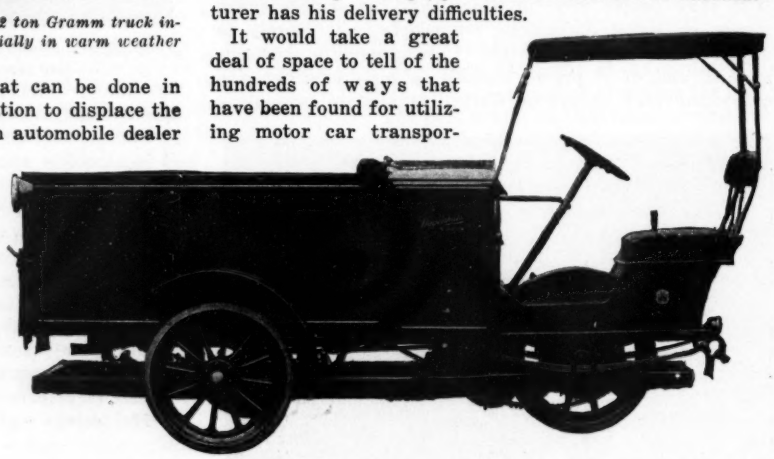
Illustrating how a Kelly-Springfield K-30 one-ton truck is used by a dealer for distributing illuminating oils from house to house

Municipalities are being motorized everywhere. In the fire department the engines formerly drawn by horses can be converted into automobile apparatus by fitting them with motors. Police departments have found self-propelled vehicles of all descriptions, from the motor cycle up to the van capable of carrying two score persons, an absolute necessity. The experiences of other departments—street cleaning, public works, etc.—have been similar.

Much of the public carrying service in cities can be done, as a rule, with great dispatch and convenience and at a good margin of profit by means of motor cars or busses, even in competition with the regular lines of tramways. In thinly settled regions motor stages are employed to much advantage. They make trips of 75 to 100 miles daily and carry light freight in addition to passengers.

The automobile dealer should not overlook the agricultural communities in his district. In the United States farmers are among the heaviest buyers of automobiles. A creamery using thirteen horses substituted a motor truck. It makes four ten-mile trips a day over country roads hauling fifteen tons of milk one way and thirty-five tons of grain the other. A motor truck hauled 11,200 pounds of alfalfa 21 miles while four horses were delivering 7,700 pounds a distance of ten miles, both vehicles starting at the same time over the same road. These are only two instances taken at random. There are many others. The farmer, it should be remembered, has his problems to meet in the moving of crops, just as the merchant or manufacturer has his delivery difficulties.

It would take a great deal of space to tell of the hundreds of ways that have been found for utilizing motor car transportation profitably. Any dealer who studies his local field attentively will be sure to see that it holds many opportunities for expansion. In all this work he will find that the American manufacturer will be of the utmost possible service to him. All that will be necessary is for the dealer abroad to state his problem clearly, and he will be told the best way to solve it.



The new Wagenhals three-wheeled electric delivery car, of 800 pounds capacity, is convenient for package distribution in cities

WHAT A YEARLY OUTPUT OF 50,000 AUTOS MEANS

SURPRISING accounts have been given of the magnitude of the output of the leading automobile manufacturers of this country, but it is safe to say that they receive but little consideration from the average person because they do not realize what the figures really mean. Taking one large concern, for instance, which claims an annual production of over 50,000 vehicles, the traffic report for March is particularly interesting, as comparisons are made which enable the layman to more fully appreciate the concentrated effort, organization and attention to detail necessary to manage a business of this extent.

During the month referred to, in which there were 26 working days, the report shows that there were handled 2,358 railroad cars, which is an average of more than 90 per day, or more than one loaded car every seven minutes for a ten-hour working day. Of the total number of cars moved, 748 were inbound, bringing raw materials and parts, and 1,610 were outbound, taking away finished automobiles destined to every part of the civilized world. As

each of these cars had a capacity for three vehicles, and some as many as six, it follows that well over 5,000 finished automobiles were sent away during the 26 days.

An excellent example of what this car movement actually represents is the fact that railroad officials claim that a city of 10,000 to 20,000 inhabitants using 20 carloads of freight would be a marvel of industry and thrift, and would mean only 520 cars for the whole city in a 26-day month. Thus, the incoming freight of this factory shows a total of 43 per cent. greater business. If this freight could be hauled in a single train, it would stretch nearly 7½ miles across the country and 17 of the largest engines made would be needed to haul the cars, while the combined incoming and outgoing cars would make a train more than 22 miles in length and form a capacity load for 53 of the biggest "Mogul" locomotives.

A list of the contents of the incoming cars would furnish considerable information regarding the requirements of the motor car industry, among them being coal, fuel oil, cylinder oil, gasoline, sand, fire brick, lumber, machinery, hair, wheels, springs, electric starting motors, batteries, magnetos, paint, white cotton, bow sockets, rims and rings, tires, tubing, several varieties of steel and other metals, leather, rubber matting, wadding and linoleum. When it is considered that these materials never come in less than carload lots, and sometimes, as in the case of forge steel, in shipments that require a whole train, the proportions of the operations of a modern automobile factory can be easily appreciated.

AMERICAN CARS AND THE EUROPEAN WAR

The Wholesale Destruction of Automobiles Abroad—Large Increase in Exports from the United States

JOHN A. OLT, export manager of the Hudson Motor Car Company, who has just returned to Detroit after a fourteen months' stay in Europe, states that it is estimated that there were 150,000 motor vehicles of all kinds in use by the contending armies shortly after the war broke out.

That American cars are playing an important part in the hostilities is indicated by satistics recently issued by the United States Department of Commerce, showing the distribution of American cars in foreign countries, as evidenced by exports for the last fiscal year. The commercial vehicles shipped to Continental Europe and Great Britain in that period numbered 480 and were valued at $465,000. Of passenger vehicles of all kinds there were 23,864, valued at $18,640,000, and parts invoiced at $3,518,000.

The loss in motor vehicles through their destruction in actual fighting or owing to their being wrecked and abandoned, is daily growing larger. To prevent a car from falling into the hands of a pursuing enemy it is usually run into a ditch or otherwise so badly damaged as to be rendered practically worthless.

Automobiles, in Mr. Olt's opinion, should be an unusually large factor in our foreign commerce in future. There must be a considerable period allowed for reconstruction and reorganization of the factories in the nations at war. Not only will they have to be rebuilt or repaired, but there will be a shortage of skilled employees for several years.

The stocks of finished cars throughout Europe have been practically exhausted, and such factories as are running are busy trying to fill Government orders. Elsewhere, says Mr. Olt, except in South America, the normal stocks on hand have been depleted by drafts made on them from Europe.

One phase of the present opportunity for American automobile manufacturers, says Mr. Olt, especially in non-producing countries outside of Europe, is to lay a proper foundation for trade by showing that their vehicles are in every way equal to the best of those of European make. Another possibility of future business is indicated by a card which he received from a dealer in Alsace-Lorraine, inquiring if the Hudson Company would have a stock of cars on hand in Europe to meet the situation that will be created as soon as peace returns.

In the latter connection it is important that dealers abroad should keep posted on any changes that may arise in regard to future governmental subsidies and specifications relating to motor cars and bear these in mind when corresponding with American manufacturers.

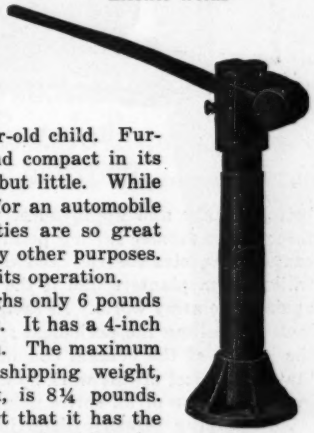
France and Germany, in time of peace, found it difficult to persuade commercial concerns to purchase motor trucks of the most approved Governmental standards, even with the inducement of substantial subsidies. Therefore, both these countries were compelled to include in their plans for motor car reserves practically every well-constructed vehicle of the right capacity, and to waive special restrictions as to detail of design or manufacture. On account of French roads being exceptionally good and their grades easy, that Government has been inclined to favor two or three-ton trucks capable of traveling at a good rate of speed. In Germany the most desired type of vehicle is that designed to carry about four tons and to haul an additional two tons on a trailer. The engines of these trucks have to be very powerful in view of their having to be used on steep mountain roads. In Austria the load requirements are somewhat less, but very high engine powers are required, as many of the frontier roads are mountainous.

The British War Office has made various stipulations as to the design and construction of the machines which it has subsidized. The principal of these are the prohibition of the use of transmission involving chain drive to the back axle, and the insistence on wheels of rather larger diameter than those usually fitted to commercial vehicles. Every British subvention model has its control and brake levers and pedals arranged identically, so that a driver competent to handle one is equally competent to handle others.

A POWERFUL HYDRAULIC AUTO JACK

WHILE an almost countless number of devices for lifting heavy weights have been placed on the market within the last few years—all of which no doubt have more or less merit—there are some that appear to embody so many special advantages that they are worthy of particular consideration. One of these implements now being offered to the trade is a small hydraulic jack of 2,500 pounds capacity which, it is claimed, can be operated with very slight effort by a six-year-old child. Furthermore, it is simple and compact in its construction and weighs but little. While it is primarily designed for an automobile jack, its lifting possibilities are so great that it is adapted to many other purposes. It is purely hydraulic in its operation.

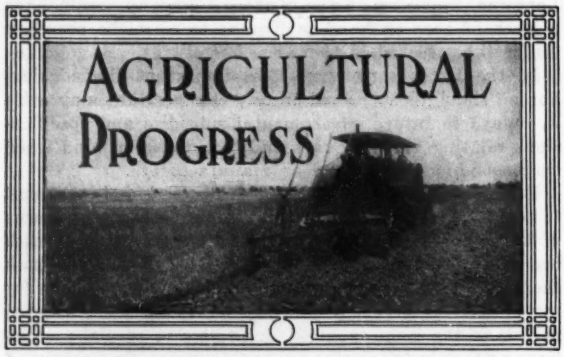
Courtesy National Stamping & Electric Works



A powerful auto jack

The jack complete weighs only 6 pounds and is 12 inches in height. It has a 4-inch base and 1½-inch column. The maximum lift is five inches. Its shipping weight, packed in a wooden box, is 8¼ pounds. The manufacturers assert that it has the greatest capacity of any jack of its size and weight that ever has been invented.

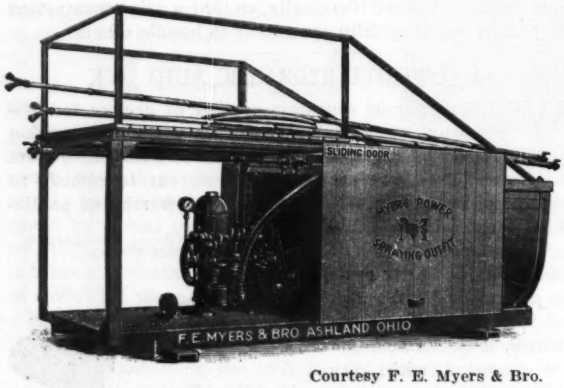
Tools of this description are great sales helps to dealers in automobiles or their accessories. They attract attention when placed in the show window, especially if a neatly-lettered card calls attention to their points of peculiar excellence. In this way they afford an easy opening for showing other goods and explaining their merits, with the probability of making such an impression on the customer that he will be likely to call again. The importance of having striking features for window display cannot be too strongly emphasized. Each article that is made a feature should be particularly adapted to the use for which it is designed, and its merits explained.



A PRACTICAL AND EFFICIENT SPRAYING MACHINE

A Moderate-Priced but Complete Little Plant that is Meeting with Great Favor

EVERY farmer and fruit grower has suffered from the ravages of insects and parasites of various kinds, and while spraying has not received the attention it merits in many instances, it is becoming more and more generally recognized not only as absolutely necessary for protection but as really the best form of insurance for good crops that can be obtained. The fruit raiser finds that, properly done, it not only results in greater yields by making the trees healthier, but increases his profits by enabling him to produce fruit that will sell at a higher price because of its



Courtesy F. E. Myers & Bro.

A spraying outfit that can be placed on an ordinary farm wagon and moved wherever needed

better quality and appearance. This applies with equal force to the farmer raising potatoes, tomatoes, cucumbers, cantaloupes, strawberries and other fruits or vegetables, while cotton planters find it the most effective protection against the army worm. In fact, many States are passing laws compelling the periodical spraying of trees, etc., for the benefit of the general community, it being recognized that the neglect of this work by a single person may result in the infection of an entire neighborhood.

As spraying properly done involves considerable time and labor, the natural supposition is that every farmer is anxious to obtain the best and most improved appliance he can get for the purpose. Because of this the machine shown herewith will doubtless interest every man who is looking for a moderate-priced spraying outfit that will meet with the various requirements of this nature on the average farm. This sprayer consists of a substantially constructed tank made of straight grain selected cypress having a capacity of 200 gallons, securely fastened to a wrought steel frame designed so that it can be placed in the body of an ordinary farm wagon. The pump and the 2-horsepower engine by which it operates are mounted on a steel bed plate in such manner that all vibration is eliminated, even when working under heavy pressure.

AN IMPROVED FERTILIZER DISTRIBUTOR

A Machine that will Interest all Farmers Because of Its Economical Features

EVERY progressive farmer naturally wants to possess the most up-to-date and improved implements and machinery, not alone because they will expedite his work and eliminate much of the labor, but also because they result in a low cost of production. An implement of this nature is the improved fertilizer distributor, shown in connection with this article.

The first and most important feature claimed for this machine is that it will do the work for which it is designed with absolute certainty in all kinds of soil and under every weather condition. Fertilizer is expensive and it is imperative that none be wasted. This machine deposits it in the amount desired in the proper depth and at a distance from the plant where it will do the most good. There is no possibility of too much being applied in some places and not enough at others. In addition, there are other features—in themselves sufficient to give the machine a leading position in the equipment of any farm. Among them is the fact that an exceptionally reliable seed drill or planter is one of the attachments. This device will open a furrow, drop the seed accurately in drills or in hills 12, 16, 20, 24, 32, 40 or 48 inches apart, at the same time distributing the fertilizer, covering the seed and marking the next row—all much better and more rapidly than would be possible by hand.

Courtesy Bateman Mfg. Co.

This machine is an effective fertilizer distributor

The machine is especially recommended for use by farmers raising large quantities of corn, beans, peas or similar crops, because in addition to doing the work above mentioned, it will serve as a very efficient ridger and, after the plant is above the ground, as a side dresser. Quite a number of farmers believe in giving the crops some assistance while they are growing, and instead of putting in all the fertilizer they intend to use at the time of planting apply small amounts from time to time during the season.

Courtesy Bateman Mfg. Co.

A device which loosens the earth and distributes food simultaneously to the growing crop

EVERY new fashion represents the combined skill and effort of thousands of persons. Back of the designers are many mills and many dextrous craftsmen. In the making of silk, the gold of textiles, an army of expert spinners, weavers and dyers is employed in working out the hues and patterns and giving adequate form an expression to the ideas of the artists. So it is with all other fabrics, no matter what the material. The laces, embroideries and garnitures that enhance the beauty of the gown and of its wearer are the work of master hands. In the designing and manufacturing of apparel for men and women no other country can offer such a high development of great facilities as the United States.

Wistaria chiffon velvet evening gown with gold braid motifs on blouse and train. Designed by Grean; velvet from American Velvet Co.

Evening wrap of wistaria velvet and brocaded satin to be worn with gown at left. Garment by Grean; velvet from American Velvet Co.

From Maison Maurice comes this gown of tan crêpe de Chine embroidered with green. Skirt is jet pailletted and sleeves transparent silk net

AMERICA A FASHION CENTER FOR WOMEN'S WEAR

Recent Fashion Fetes in American Cities Demonstrate the Close Co-operation Now Existing Between the Designer and the Manufacturer

AMONG the great shifts and changes that were proceeding slowly but have been brought to a sudden culmination by the influences of war, one has been the moving of the center of the world of fashion from France to America —from Paris to New York. Whether this change will be permanent remains to be seen, but that it has occurred is beyond dispute.

There has been an organized effort in this direction in the United States for a long time. At the outset the originators of distinctly American designs were confronted with the difficulty of obtaining a sufficient variety of fabrics of domestic manufacture. At first there was the disadvantage that American styles had to be made up out of foreign materials. This situation no longer exists. In beauty of coloring, softness of weave and fineness of texture American textiles for women's wear now leave little to be desired.

This was evidenced recently, in a very striking way, by an industrial exposition that was held in Paterson, New Jersey, near New York. Paterson is the center of the silk manufacturing industry of the Western Hemisphere. Many thousands of skilled workmen are employed in its vast mills. One of the most elaborate and effective features of this exhibition was a display of gowns, shown on living models. In style, materials and workmanship these gowns were exclusively American. How attractive these were is shown by some of the photographs that accompany this article.

Still another exhibition of this sort was a fashion fête that was held a little later at one of the great hotels in New York City. This fête lasted for two days, and its especial patrons were the society leaders of the American metropolis. Its object was to encourage New York dressmakers to create and launch their own original designs—a necessity brought about by the closing of the ateliers of Paris on account of the war. Here, too, the model gowns were all of American design and manufacture. They were remarkable for their gracefulness of line, richness of color, taste in combinations of materials and colors, and appropriateness for the various occasions for which they were designed.

The American tailor-made gown already is the favorite in the world of fashion. It has long been accepted everywhere as the standard of its class. One of the principal reasons for this is that New York is the only place where an attempt has been made to specialize in strictly tailored costumes. The American society woman spends much of

her leisure time out of doors; therefore she likes to have her tailor-made frocks practical—suitable for walking and shopping. So does the woman of fashion abroad. The supply has simply met the demand, and the American creations that have resulted are well tailored and comfortable and excel in style the designs of any other fashion center.

Parisian designers, on the other hand, have concentrated their efforts for the most part on the creation of afternoon, dinner and street frocks in elaborate styles and colors. The American creators of costumes have drawn much inspiration from Paris for years, and have adapted French ideas to American tastes. That their adaptations in many cases have been an improvement on the originals has been evidenced by the fact that these American designs, in their turn, often have been adopted or adapted by some of the great French modistes.

Another thing that has helped the spread of American fashions among discriminating buyers has been the excellence and thoroughness of the workmanship bestowed on the product. A model frock from Paris is seldom sold direct to the woman who is going to wear it. In most cases it goes to a dealer who buys it for the style rather than the workmanship. The American-made frock, on the other hand, is held together with firm stitching and its bows, laces and embroideries, in addition to being artistically placed, will stand wear. This combination of style and workmanship has done much to make American-made gowns preferred among discriminating buyers.

New York's competition with Paris, however, is purely friendly, for the American metropolis is merely doing its share to keep the fashion world in order while the French are at war. The art of dress and its designing, as exemplified so long in Paris, is the result of several centuries of development. It has made the women of many countries prejudiced against the products of their own modistes, and in favor of those of France. This has been especially the case in America. This lack of appreciation by American women for styles and gowns made in the United States is rapidly disappearing.

Dress, in America, has become an art. The demand for beautiful gowns has caused artistic geniuses to be developed among the modistes of New York and other large cities. They are close students of the masterpieces in the museums for new inspirations in color and line. When one of these designers evolves a dream of a material softer in quality or deeper in tone than anything that has yet been produced, he consults with the master weavers and they experiment until the artist's vision becomes a reality.

It is this enthusiastic co-operation between the designer and the manufacturer that has made American fashions possible and is likely to give them a prominent and permanent place in the world of dress. Already South America is turning to New York for its new gowns, and so are other countries that hitherto have been ardent supporters of Paris. That New York will be able to meet in the fullest degree every demand that these new customers will create is beyond question.

Afternoon gown of green crêpe meteor which follows the moyen age style of frocks. Design by Walter E. Bedell & Co.; silk by National Dyeing Co.

Country club suit of hunter green corduroy whose full skirt allows freedom in walking. Designed by Franklin Simon & Co.; manufacturer, Ben Gershel & Co.

Afternoon gown of tango crêpe de Chine; soutache braiding in monotone; blouse of crême shadow lace. Made, W. E. Bedell & Co.; silk, Arohnson-Bloom Silk Co.

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Made in 200 Styles
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Style, Fit and Material are of the Highest Class

One of Our Various Styles

No. 1698.—Made of fine mercerized voile. Waist is handsomely trimmed with fine net. Finished around neck with shadow lace. A bargain at $3.75

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Señorita *Silk-Spun*
SCARFS, SHAWLS AND MANTILLAS

SEÑORITA *Silk-Spun* is not silk, but is more exquisite in weave and richer in sheen than any silk you have ever seen. It appeals not only by its superb texture and exquisite coloring, but by the advanced and attractive nature of its styles and models. Silk itself cannot give the marvelous colors, the graceful draping or the spun-glass delicacy of this material.

SEÑORITA *Silk-Spun* Afternoon and Evening Scarfs in the newest colors, having long knotted and fringed ends, and also scarfs of the same material having fancy borders, $4.50 to $30 per dozen.

Beautiful reversible scarfs 18 by 84 in., having double close weave with interchangeable colors, with large tassel at either end, $24 a dozen.

New this season: Beautifully rich-flowered SEÑORITA *Silk-Spun* Scarfs with long fringes, with designs in natural pinks, blues and lavenders interspersed with green leaves on a white background; scarfs with apple blossom designs, 18 by 84 in., $18 a dozen. Scarfs with either rosebuds, poppies, chrysanthemums or large rose patterns, 36 by 90 in., $39 a doz.

SEÑORITA *Silk-Spun* square shawls 50 by 50 in., with fringe $15, $18 and $24 per dozen respectively, According to quality.

SEÑORITA *Silk-Spun* goods may always be had in black, white, pink, light blue, heliotrope and coffee. Also in two-tone stripes of white and pink, white and blue, white and heliotrope and white and corn.

All of the above prices are in **American gold.** Dealers should send at once for samples and for our new booklet describing these charming goods, which have so quickly attained enormous popularity in both continents. The booklet gives complete information and prices of hundreds of styles and combinations, suitable for all occasions.

The Ohio Knitting Mills Co., 623 Cherry Street, Toledo, Ohio, U. S. A.

WE are the largest manufacturers in the world of

Millinery Wires

of every description, Paper, Cotton, Mercerized and Silk covered, also Specialty and artificial flower wires. Send for our samples and price list.

WE ARE SOLE DISTRIBUTORS FOR

Atlas Buckram Company

MAKERS OF

Buckram, Buckramettes, elastic fabrics and all styles of nets suitable for Hat, Hat Frames and Jobbing Millinery purposes. We carry complete stocks of above.

HOLYOKE COVERED WIRE CO.
621 Broadway, New York, U. S. A.

Cable Address: HOLYOKCO

H. T. SMETHURST
Sales Manager

ESTABLISHED 1870

R. KRAUSE & SON

72-74 Greene St. NEW YORK CITY
U. S. A.

MANUFACTURERS OF
POPULAR-PRICED

Ribbons

Silk and Cotton in Plain and Moire Effects

Warp Print Effects in great variety

Plain Back, Silk face as well as Cotton face Velvet Ribbons

Goods regularly rolled in 10-yard pieces, but easily changed to suit demand

Samples cheerfully submitted to Jobbing Trade or Large Distributors

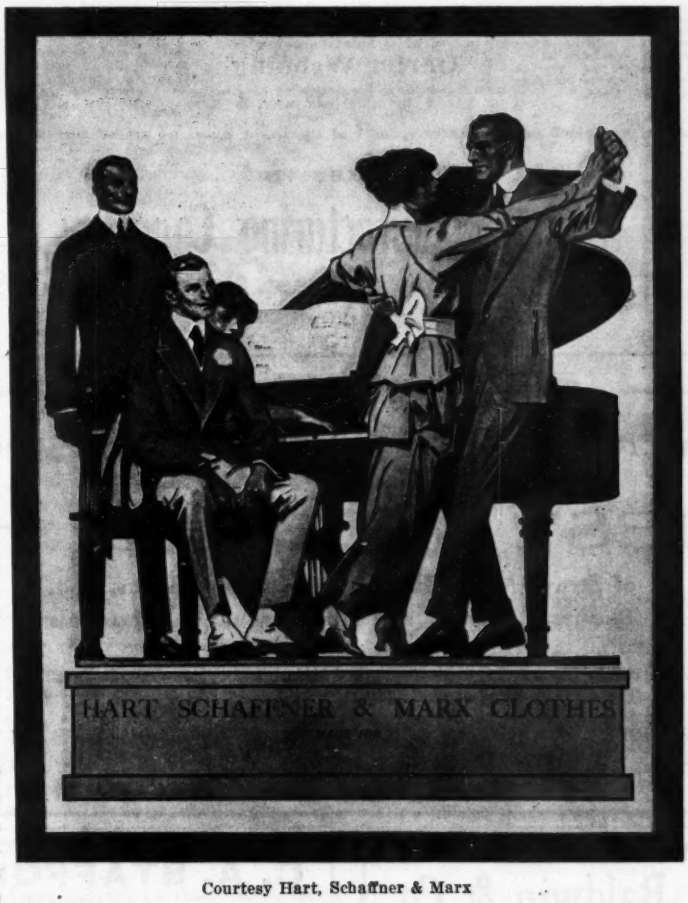
WAYS IN WHICH AMERICAN DRY GOODS MANUFACTURERS HELP THE RETAILER

The Ingenuity of Many Talented and Highly Paid Men Constantly Employed to Increase the Merchant's Trade in Specific Lines

ONE of the most striking and characteristic features of American merchandising is the manner in which manufacturers in many lines help the retailers who handle their goods by popularizing their product in every practicable advertising way in campaigns that often cover an entire country. The cost is borne, for the most part, entirely by the manufacturer, who reaps his benefit from the greatly increased sale of his product, which is generally a trade-marked article. While this method of sales-help is national in its character, certain aspects of it are especially designed to aid retailers individually as well as collectively.

This manner of interesting the general public, so that it may become sufficiently attracted by an article to seek out the nearest retailer and buy it, or to send for it by mail, has reached its highest and most extensive development in the United States, where it had its origin. In foreign countries similar campaigns are beginning to be carried out by American manufacturers, and they are proving fully as successful as at home.

For example, a large concern in the United States recently decided to try in Great Britain the same national advertising and selling plan that it had been using throughout North America. It advertised its goods in the English newspapers and periodicals in such a systematic way and so extensively that, in a comparatively short time, the product, from being little known and seldom called for, sprang into a tremendous demand. A feature of this campaign was the furnishing of hundreds of individual merchants with means of adequately displaying the goods of this particular line. These devices included such things as glass cases showing samples of different styles and sizes of the merchandise, handsome display cards, tellingly lettered and illustrated, and other striking methods of attracting attention, creating inquiry and the desire to buy. In the case of some of the larger London shops, and those in other great centers of population in the British Isles, the American manufacturer in question furnished without charge the services of a number of specialists in the art of window dressing.



Courtesy Hart, Schaffner & Marx

A window display card in colors which attracts attention—through its artistic excellence—to the styles of dress it illustrates

This vigorous, well-planned and carefully executed effort brought great results. It helped the retailers concerned, not only by multiplying many fold the sales of the merchandise that was so widely advertised, but also by adding to their sales of other goods. It paid the manufacturer because it established a new, large and permanent outlet for his product. Everyone was benefited, but probably the public most of all because the article offered was superior in many ways to anything similar offered by foreign makers.

Of course all manufacturers in all lines of goods made in America are not in a position to carry out such nation-wide plans for the popularizing of their product, but there is an increasing number of firms in the United States making their goods known in foreign lands in this way and helping their retail representatives beside. The amplitude of this work varies, naturally, with individual manufacturers owing to the character of the goods to be pushed. In some cases the publicity is confined to advertising cards. These are, as a rule, works of art—attractive in design and coloring—and lettered in the language of the country where they are to be used. They are compelling sales-helps, especially when shown in connection with the goods to which they call attention.

There is an infinite variety of other ways in which the manufacturer helps the retailer—ways that are adaptable even to the most distant countries. Among these are clearly outlined plans, which are furnished to the merchant in his own language, for a series of changes in displaying the goods to the best advantage. In connection with this, the wording of advertisements for insertion in the local press is furnished. Sometimes the cost of this advertising is borne by the United States manufacturer, and in other cases it is participated in by the retailer.

Counter fixtures of a portable character for displaying samples of merchandise are also suplied by a number of American manufacturers and in a great diversity of lines. These show the goods at a glance and are of considerable advantage.

The object of all these sales-helps is to attract the prospective customer, so that, in the first place, he may enter the shop, and then buy before he departs. To accomplish these results the ingenuity of hundreds of the keenest brains in this branch of American merchandising is being continually employed. Retail competition in the United States—as in every highly civilized nation—is very earnest and persistent. Therefore the efforts that must be put forth to meet it necessarily are of the highest character and new advertising methods—or the improvement of old

THE RUSSELL MANUFACTURING COMPANY'S

Elastic Web Products and Cotton Belting

REPRESENT THREE GENERATIONS OF ACCUMULATED EXPERIENCE

WHY NOT BUY THE BEST?

Cotton Belting

Solid Woven Cotton Machine Belting

One of the most important products of the Russell Mfg. Co. is cotton belting in many widths and thicknesses up to 44 inches wide and ten-ply thick for both power transmission and conveying. They are water and climate proof. Russell cotton belts are used all through the Michigan lumber region, where the temperature ranges from 40 degrees below zero in winter to 100 degrees above in summer—the extremes of arctic cold and tropic heat.

Suspenders (or Braces)

A very important branch of this company's business is the making of suspenders. In addition to manufacturing and selling approximately 350,000 dozen suspenders a year, it makes elastic webbing for other suspender manufacturers sufficient for 1,000,000 dozen more. These goods are made to meet every taste and fashion around the world. The better grades are supplied packed in artistic boxes if desired.

Elastic Webbing

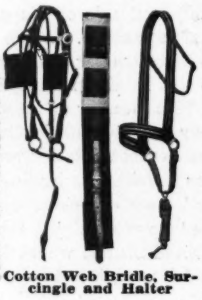
This company makes elastic webs of every variety, including corset webs, braids, and many other high grade and unusual varieties. These webs can be packed in any form to suit customer. For the retail trade Russell webbing is wound on reels and put in glass front cases.

Garter Webbing

Among the many varieties of elastic webbing made by this company is garter webbing, which is put up in attractive styles of packing to meet the requirements of the trade.

Cotton Harness

This company makes every kind of harness that can be supplied from cotton webbing, including truck harness standing a test of 5,000 pounds on each trace, fancy harness in brown, white or black; halters and headstalls in white, brown, blue, red, and striped web; and surcingles in every conceivable pattern.



Cotton Web Bridle, Surcingle and Halter

Agents wanted for Russell products in every part of the world where we are not already represented.

Founded in 1830

Incorporated 1834

ADDRESS THE

Russell Manufacturing Company

58-60 Leonard Street, New York

FACTORY AT MIDDLETOWN, CONN., U. S. A.

Established 84 Years

Capital $900,000

A. M. LOEWENTHAL & SON

MANUFACTURERS OF

LADIES' BLOCKED HATS

of Straw, Milan, Hemp, Milan Hemp, Satins, Felt, Plushes, Velvets and all Seasonable Materials

WE ARE CREATORS OF THE LATEST FASHIONED AND GOOD SELLING STYLES

FULL DETAILS AND PRICES GIVEN ON REQUEST

106-108 W. 32d Street
New York, U. S. A.

Woodward, Baldwin & Co.

COMMISSION MERCHANTS

43-45 Worth Street, New York

Cotton Goods for Export

LEADING BRANDS IN

Brown Sheetings and Drills, Fine Cloths, Shirtings, Grey Ducks in a large variety of widths and weights.

ESTABLISHED 1894

G. A. STAFFORD & CO.

Cable Address: "Gasco," A B C 5th Ed. 39 Worth Street, New York. U. S. A.

General Selling Agents of AMERICAN COTTON GOODS, including unbleached sheetings and drills, colored chambrays, ginghams, suitings cenims, khakis, etc.; also the following fabrics made ESPECIALLY FOR EXPORT—ask for these brands

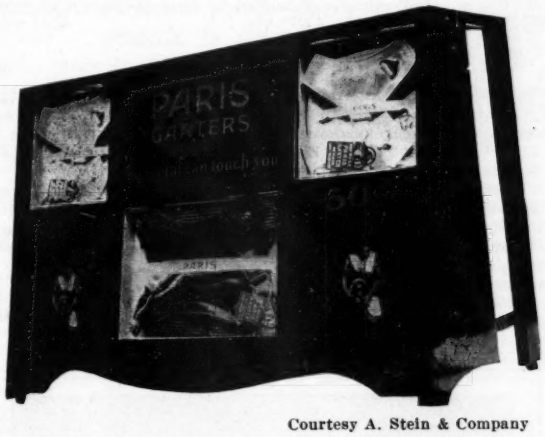
JAGANAGH MADRAS

MANUFACTURED IN UNITED STATES OF AMERICA

Correspondence with leading importers solicited—in any language

ones—have to be constantly devised. It naturally follows that plans that have been successful in the United States can be used with equally good results elsewhere when they are changed to meet the local requirements.

In other words the American manufacturer who pushes his foreign trade by national advertising not only helps the retailer in general, but also places at his disposition a staff of experts costing anywhere from $10,000 to $100,000 a year. The display announcement of the retail merchant



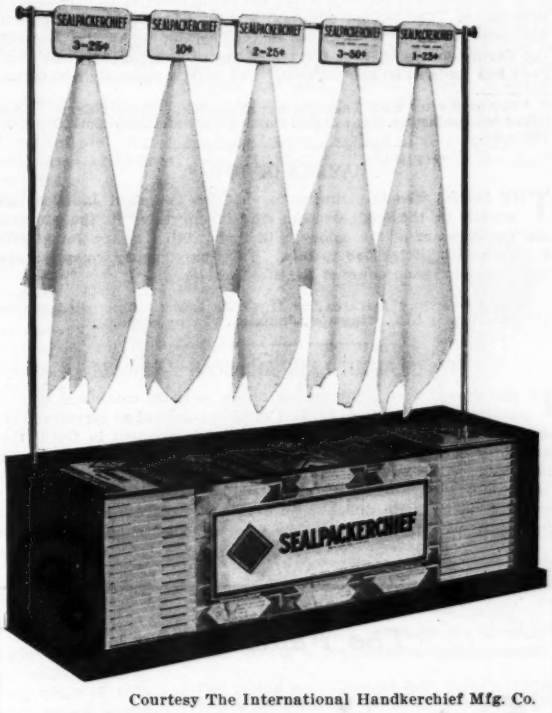
Courtesy A. Stein & Company

A counter or window sales help which has popularized the article by showing graphically its merits and its use

in some far-off city, for instance, instead of being written by the merchant himself, by one of his clerks, or by someone who is not an expert, is prepared in all its details by one of the manufacturer's advertising specialists who has made a life study of wording advertisements so that they will attract trade. Similarly, this is the case in every other line of sales-helps furnished by the American manufacturer.

The war naturally has disturbed, or suspended temporarily, relations that have existed for years between retail merchants in many lands and the European manufacturers or wholesalers who have been supplying them with their goods. To take care of their requirements, for the time being at least, it will be necessary for these merchants to establish new connections in the United States so that their customers may not be inconvenienced. It may be that the American manufacturer or jobber or commission merchant will not be fully informed as to the peculiar needs of each locality, and, for that reason, it will be well for the dealer in South America, or the Orient or Australia, or elsewhere, to make clear the requirements of his trade so that they can be met accurately and without loss of time.

The American manufacturer not only welcomse such sales-helps from foreign correspondents, and takes especial pains to comply with all their suggestions, but also, once business relations have been established, he will gladly furnish his new customer with suggestions as may seem advantageous for the increase of business. Co-operation of this sort between the manufacturer and retailer is one of the essentials of modern business. Its basis is the constant interchange of ideas. The up-to-date merchant in the Antipodes is more closely connected by bonds of mutual interest with the manufacturer who supplies him than he usually realizes. The prosperity of each depends in no small measure on the other's success. The more the retailer sells, the more the manufacturer makes. The trade of both expands in ever-widening circles.



Courtesy The International Handkerchief Mfg. Co.

The customer selects his handkerchief from the sample; the handkerchief he buys is in a sanitary sealed package

It is this principle that has prompted some of the large American concerns to send personal representatives more or less regularly to visit their foreign clients. The visits of these travelers are not purely commercial affairs. They do not call on the merchant solely for the purpose of getting his order. They are more interested in ways in which each individual business can be increased so that a larger and larger volume of merchandise can be handled at a mutually satisfactory profit.

NO STOCKING IS PROOF AGAINST SHARP TOE-NAILS, HENCE PROPER TRIMMING OF THEM IS ESSENTIAL.

COPYRIGHTED 1910 O'CALLAGHAN & FEDDEN, NEW YORK

"NINE THIRTY NINE"
THE GUARANTEED HOSE
TRADE MARK

IF IN FAIRNESS, YOU ARE NOT SATISFIED WITH THE WEAR OF THIS STOCKING, A NEW PAIR WILL BE GIVEN IN EXCHANGE, IF RETURNED PROPERLY LAUNDERED, TO THE MANUFACTURERS.
O'CALLAGHAN & FEDDEN, 4393 PARK AVENUE, NEW YORK CITY

INSTRUCT YOUR LAUNDRESS TO AVOID WASHING SODAS, AND TO USE IVORY OR OTHER PURE SOAP AND LUKE WARM WATER.

One of Our Leading Silk Numbers
Price $6.00 per dozen. All Colors.

We export Hosiery to Canada, Mexico, South America, England, France, Germany, Switzerland, Italy, Palestine, Egypt, Philippine Islands, Asia, Africa, Australia, New Zealand, etc., etc.

Silk, Cotton, Lisle and Wool Hosiery for all climates, including Silk Hosiery with Wool feet.

Also manufacturers, under contract, of army gloves used by the United States Government.

— REFERENCES —
Chemical National Bank, New York
Fifth National Bank, New York
Knauth, Nachod & Kuhne, New York and Leipsic

— TERMS —
F. O. B. New York. Cash against Bankers' Credit or through N. Y. Export Commission House.

O'CALLAGHAN & FEDDEN
MANUFACTURERS OF HOSIERY
Salesrooms: 121-123 East 24th Street, New York City, N. Y., U. S. A.

BOOK REVIEWS

A GREAT COMMERCIAL ENTERPRISE

IT is only within the last few years that authors and publishers have begun to perceive the romantic side of business, to appreciate the dramatic aspect of some of its momentous struggles and triumphs. This book * is the first of a series "planned"—to quote from the publisher's prefatory note—"to describe certain big businesses whose histories and operations concern and should interest the public." It describes in a flowing graphic style that is as absorbing as a novel the origin and development of the United Fruit Company and its various creative enterprises. To those who are interested in banana cultivation as an industry in which to invest time or capital this book will be of the utmost practical value. It is also useful to those concerned with the steamship business, and particularly to Americans contemplating the investment of capital in such enterprises. The tourist will also find its pages full of suggestion and helpfulness, as it describes in considerable detail the fascinating Caribbean region that the enterprise of the United Fruit Company has made so largely its own. The book is copiously illustrated.

* CONQUEST OF THE TROPICS, by Frederick Upham Adams. Published by Doubleday, Page & Co., Garden City and New York, U. S. A. Price $2.

JAMAICA OF TO-DAY

THE tourist who is planning to visit the island of Jamaica this winter, or the business man who is interested in the progress and development of the colony, will find "20th Century Jamaica" * a very useful little book to own. It is particularly complete and instructive in its accounts of the life of the people.

* 20TH CENTURY JAMAICA, by H. G. de Lisser. Published by the Jamaica Times, Ltd., Kingston, Jamaica. Price 1s. 6d.

FACTS ABOUT LATIN-AMERICAN RAILWAYS

IT has always been a matter for regret to those concerned in promoting the export trade of the United States that so comparatively little American capital has hitherto found investment in the Latin-American countries other than Mexico and Cuba. One reason for this lack of investment has been the fact that those American capitalists who might be interested in Latin-American projects experienced no little difficulty in obtaining accurate and impartial information regarding them. The present book * supplies this need to a considerable extent with respect to Latin-American railways. It gives the names and location of all the existing and projected railway lines in South and Central America and the West Indies, together with the leading facts regarding them such as investors are accustomed to obtain in American railway manuals. The book contains a vast amount of detailed information regarding these railways, which, as far as time has permitted its statements to be checked, seems to be accurate and reliable. It is a most indispensable handbook, not only to investors, but to all who are interested in the progress and development of these countries and the extension of their transportation systems.

* THE RAILWAYS OF SOUTH AND CENTRAL AMERICA, by Frederick M. Halsey, 1914 edition. Published by Francis Emory Fitch, 47 Broad Street, New York. Price $1.

VITAL ECONOMIC PROBLEMS

THOSE who are interested in the things that are related to the distribution of wealth will find the subject of property and contract thoroughly discussed in the two volumes * by Richard T. Ely, Professor of Political Economy in the University of Wisconsin, that have just come from the press.

Prof. Ely is the author of several other works on economic subjects and speaks with authority. His latest work is the outcome of many years of study. It discusses both the legal and the economic aspects of the fundamental questions of which it treats, and offers many valuable suggestions.

*PROPERTY AND CONTRACT IN THEIR RELATION TO THE DISTRIBUTION OF WEALTH, by Richard T. Ely. Published by The Macmillan Co., New York: $4.

The Fame of the

Steinway

the Piano by which all others are measured and judged, is not merely a local or national one. It is international, universal, world-wide, and is the recognition, in the strongest possible manner, of a work of art that is in its line unequalled and unrivalled.

¶ From its inception the Steinway Piano has been known as THE BEST PIANO, without qualification and without limitation.

Prices range from $550 to $1600 in American gold, f. o. b. New York

Catalogue on Application.

STEINWAY & SONS

STEINWAY HALL

107-109 East 14th Street, New York

Represented by the Foremost Dealers Everywhere

Signal Truck owned by Ralphs Grocery Co.

Signal Motor Trucks

Worm* Drive *Chain

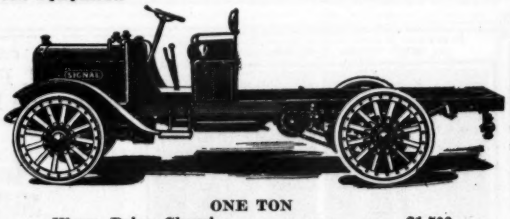
Signal Motor Trucks are made in two capacities—one ton and one and one-half ton each with the option of either worm or chain drive and in two lengths of wheel base. These options make the Signal best fitted for any haulage requirements in its capacity, and the construction insures the service you demand from motor trucks.

Signal owners are more than satisfied with the truck as is evidenced by the number of repeat orders received, the Signal stays sold and gives dependable and economical day in and day out service.

The installation of Signal Trucks means better delivery at less cost. Some of the largest concerns in the country have found the solution of their transportation problems in the Signal.

The Signal has a 4-cylinder motor 3¾x5¼ inches and is built with the very best of materials and workmanship throughout—the high quality of its construction is proven by the exceptional service rendered by these trucks.

Chassis is furnished painted in lead, with driver's seat and full equipment.

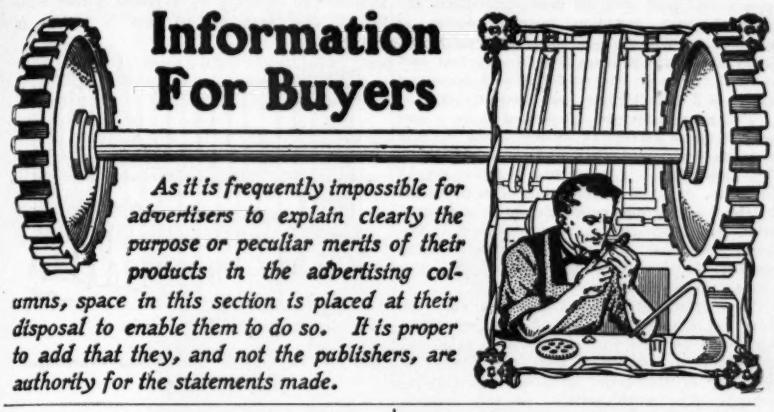


ONE TON
Worm Drive Chassis - - - - - - - - $1,500
AMERICAN GOLD
Chain Drive Chassis - - - - - - - - 1,400
AMERICAN GOLD
ONE AND ONE-HALF TON
Worm Drive Chassis - - - - - - - - 1,750
AMERICAN GOLD

$90 extra boxed for export and delivered to vessel at New York

SIGNAL MOTOR TRUCK COMPANY

DETROIT, MICH., U. S. A.

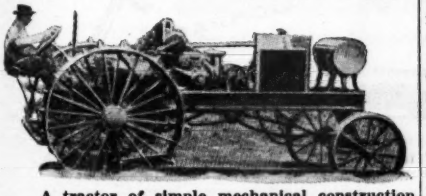


Information For Buyers

As it is frequently impossible for advertisers to explain clearly the purpose or peculiar merits of their products in the advertising columns, space in this section is placed at their disposal to enable them to do so. It is proper to add that they, and not the publishers, are authority for the statements made.

Gasoline Engines for the Farmer

BEFORE the advent of the gasoline engine, the farmer, his wife and all hands wore their lives threadbare with unremitting drudgery. A good share of farm work consisted in doing the same wearisome things over and over again, day after day. Now all this is changed. The ever-busy farm engine

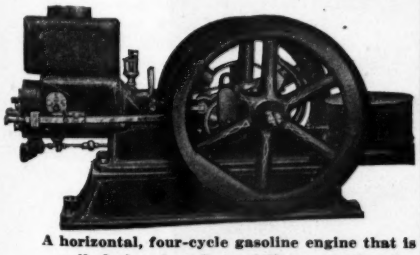


A tractor of simple mechanical construction that will endure hard work with good care

pumps the water wherever it is needed, to the house, to the tank in the pasture where the stock is watered, and to the barn; it runs the fodder cutter, the cream separator, the churn, the washing machine, and every small device about the place that can be moved by power. Instead of doing all these things by hand—either before the day's work of plowing, seeding, cultivating or harvesting begins, or after it has ended and every tired muscle cries out for rest—the farmer or his wife simply starts the gasoline engine going and stops it when its task is finished. This takes neither time nor effort. Both are saved, and give an added zest to the accomplishment of other work that cannot be turned over to the tireless little machine.

The gasoline engine has now become as much a necessity on the farm as the typewriter or the adding machine in the business office. Like the cream separator, the milking machine, the farm tractor and other things, it is a tool that is essential to the success of every progressive farmer.

In Iowa, which is the richest agricultural State of the United States, the gasoline engine and the cream separator have found especially wide employment. The Iowa farmers were



A horizontal, four-cycle gasoline engine that is well designed and carefully proportioned

among the first to see that they were necessities. It is therefore only logical that the development of these machines should have proceeded rapidly in that section. One of the principal centers of their manufacture is in the city of Waterloo, in the midst of a rich farming district. In this place are made and from it are shipped all over the world the "Waterloo Boy" line of agricultural implements, which includes, besides gasoline engines and cream separators, milking machines, farm tractors and manure spreaders.

The "Waterloo Boy" tractor is a one-man machine of 20 horsepower, and easily pulls three 14-inch bottom plows. The makers state that it is economical in the use of fuel—paraffin, kerosene, distillate or naptha—and always gives full and efficient service.

The "Waterloo Boy" gasoline (or petrol) horizontal, four-cycle engine is well designed and accurately built. It can be used for any purpose to which mechanical power can be applied. It will turn a clothes wringer, run a corn sheller or a sheep-shearing machine, and, with a force pump, can be utilized to sprinkle the lawn or garden, wash milk cans, carriages or windows.

The "Waterloo Boy" cream separator has a big, low bowl so that the farmer's wife does not have to lift the heavy pans of milk to any height. It skims down to one one-thousandth of the cream.

The milking machine makes milking a diversion. It takes away from it all the drudgery, the aching hands and the lame back, and is perfectly sanitary.

A cream separator that skims close

Milking machines ease farm work

All these machines, each of which has marked a definite step forward in farm progress, are manufactured by the Waterloo Gasoline Engine Company, 207 West Third Avenue, Waterloo, Iowa, U. S. A., to whom inquiries for catalogues, prices and agencies should be addressed.

A New Electric Tachometer

AN important requirement of the modern manufacturing establishment in which power is used is a thoroughly reliable record of the speed at which the machinery is moving, as this information has a considerable bearing upon the rate of production and the cost of operation. Some of the more important applications are in connection with engines, turbines, generators, paper machines, blast furnace blowing engines, motors and pumps, and as any device for registering the speed at which machinery of this class is moving will be subjected to considerable rough usage, it must necessarily be of rugged and durable construction if it is to give continuous and satisfactory service. The accompanying illustration shows the new Electric Tachometer manufactured by the Bristol Company, of Waterbury, Conn., U. S. A., an instrument of the A. C. type, which is claimed to be particularly well suited to the rough operating conditions met with in the average mill, power plant or shop. Although it is an electric tachometer, no sliding contacts or brushes are used and no delicate millivoltmeter movements are required. There are no complicated parts to get out of order and the recording instrument is so arranged that the pen is always in contact with the chart.

This serviceable device, which measures the speed at which machinery moves, is important to manufacturers

thus giving a continuous and faithful record of even the slightest variation in speed. This record can be furnished with either 6, 8 or 12 inch charts. As shown in the illustration the outfit comprises an indicating instrument for the operator at his post of duty, and a recording device that may be placed in the office of the superintendent or foreman, which, by means of leads that can be supplied, may be located almost any distance away. A simple form of this tachometer can also be furnished with either the indicator or recorder alone.

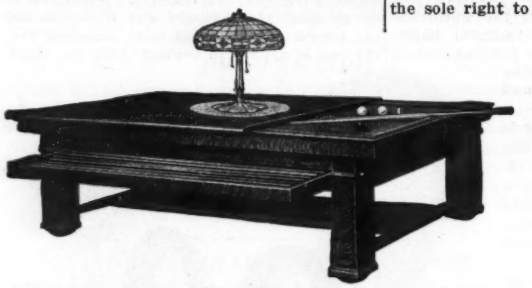
Another ingenious device manufactured by this firm is the Bristol Patent Float Type Recording Pressure Gauge, which is designed to record the velocity or rate of flow of air, gas, water or steam on charts having uniform graduations proportioned to the rate of speed or volume. These instruments are made in a number of different designs to meet with varying requirements, and they are used by a great number of municipalities desiring to record the rate at which water is flowing through their mains, by oil companies, gas works, engineers and many others. The Bristol Company have ready for distribution to interested parties carefully prepared catalogues in which the various advantages and methods of operation of their products are fully described, and those desiring copies can obtain the same by application to them at the above address, particularly mentioning Bulletin K-803. This firm also publish a large catalogue, No. 160, showing all of their products.

Billiards as a Business Builder

ONE of the most striking developments in the business world in recent years has been the increased interest displayed in the billiard table line. It seems as though everybody is playing billiards or pocket billiards—men and boys, women and girls, being devoted to this fascinating pastime. From all over the world comes the insistent demand for billiard tables, particularly those suitable for home use, and judging from present indications this demand is going to be permanent.

The Brunswick - Balke - Collender Company, which is now sixty-two years of age, owns nine great factories, devoted exclusively to the manufacture of billiard tables and bowling equipment. It handles everything connected with billiards, and states that all big championship matches are played on its tables.

One of the most popular models that has been introduced within recent years is the combination library and billiard table shown herewith, the demand for which has been extremely heavy from all parts of the world, owing to its ingenious and substantial construction, and because it is particularly adaptable for use in apartments and homes of small dimensions. The world-wide plan of selling these tables through foreign agencies offers a splendid opportunity to aggressive dealers, especially as their efforts will be assisted by the efficient export department maintained by the manufacturer. Catalogues are published in both English and Spanish, and a very reasonable discount proposition is made. Among other very popular tables made by the company are what is known as the Brunswick "Convertibles," which serve as dining tables or davenports when not in use for billiard playing. Those desiring to handle a profitable and easy selling line should write to Dept. Z. L. of the Brunswick-Balke-Collender Company, 623-633 S. Wabash Avenue, Chicago, Ill., U. S. A.



Brunswick combination library and billiard table for home use—an exceedingly popular style

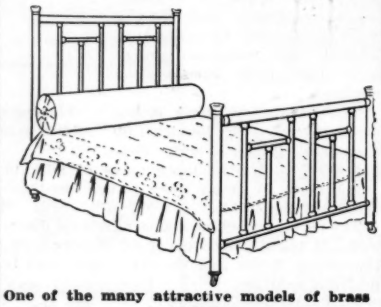
A Line of Guaranteed Bedsteads

THE accompanying illustrations show a number of the products made by the Hard Manufacturing Company, Buffalo, New York, U. S. A., who for many years have been extensive manufacturers of a reliable line of bedsteads, cots, bed-springs, etc. Among them is a folding cot, which has acquired great popularity because of its simple but sturdy construction and the very moderate price at which it is sold. The frame is of selected hard maple, with rust-proof metal joints, and the cover is a heavy brown duck, that is guaranteed to withstand any tropical climate. When opened for use this cot is 6 feet 3 inches in length by 2 feet 2 inches wide and 18 inches in height. It folds up into a compact bundle measuring 37 x 6 x 4 inches and weighs only 17 pounds.

The crib illustrated herewith is very strongly constructed, as it is made with malleable iron connections throughout and every part is warranted to be unbreakable. These cribs are finished with three coats of porcelain enamel in white, blue, green, pink, cream and gold, and all brass trimmings are covered with baked-on lacquer, which is claimed by the makers to be untarnishable. They are made in sizes 2½ by 4½ feet and 3 by 5 feet, and packed for export occupy a space of 7 and 9 cubic feet, respectively.

The brass bedstead illustrated is only one of the many attractive models made by this concern, and may be had in four sizes, 4½, 4, 3½ and 3 feet. It is finished in either bright or satin, or in a combination of both called "Polet," and is untarnishable, as it is covered with an expensive baked-on lacquer. The space occupied by these bedsteads when packed for export is 11, 10, 8½ and 7½ cubic feet, respectively.

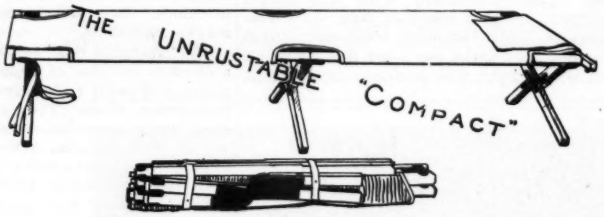
The Hard Manufacturing Company are very large manufacturers of iron bedsteads, nickle-plated beds and springs, and they call attention to the fact that they make a specialty of fitting out hospitals, institutions, schools, etc., with articles of this nature. The company are also the patentees, and have the sole right to manufacture the Automatic Wire Weaving Machine, shown in connection with this article. One of them can weave



One of the many attractive models of brass bedsteads

400 pounds of wire per day, with a minimum of waste, while a single operator can attend to three machines. It weaves fabric of any width and from 40 inches to 77 inches in length, and it takes up a space 4 feet wide by 12 feet long and 5 feet 6 inches in height. The use of this machine eliminates all waste of wire and costs practically nothing for repairs, as the only part liable to wear out is a small plate costing about five cents.

This crib is strongly constructed—warranted unbreakable



A folding cot that will withstand heat and humidity is quite indispensible in the tropics

Those interested in any of the above classes of merchandise should write the manufacturers for their general catalogue, in which will be found specifications, illustrated descriptions, prices and much other information.

Automatic wire weaving machines eliminate waste and are easily kept in repair

Fine Footwear

CATALOGUE No. 27 of "Star Brand" shoes for the season of 1914-15 effectively illustrates the product of Roberts, Johnson & Rand, St. Louis, Missouri, U. S. A., who state that they make 7,000,000 pairs of footwear annually. Their line comprises not only men's, women's and children's boots and shoes in great variety, but also rubber footwear, shoe laces, dressings and polishes, rubber heels, insoles, shoemakers' tools, etc. They make a specialty of their mail order business with retail merchants.

How Rings are Made

THERE is more high intelligence and craftsmanship needed in the manufacture of finger rings than the average purchaser of them has any idea.

The first striking thing that impresses the visitor to the factory where the "Niagara" rings are made is a big steel cage where United States twenty-dollar gold pieces are received and weighed in order to determine the exact amount of silver alloy needed to give the rings proper strength and stiffness.

The gold and silver then go to the crucibles, where they are melted by oxygen blowpipes, which generate a tremendous degree of heat. A steady-handed man pours the molten metal into moulds where it is cast into bars. These pass to huge electric drop hammers a few feet away. These powerful hammers forge and shape the now cool bar-gold into bands and other ring mountings. Forged gold, like other forged metals, has the maximum of strength, wear and polish, which is the reason why, in a factory like this, the older method of casting rings in moulds is not used.

These bands next go to the ring-makers' bench, where, with knife, file and chisel, the stamped ring is shaped and finished so that it may go to the buffers and polishers just beyond. There the ring's rather dull surface is made as smooth and bright as a mirror and ready for the stones that are to be set in it.

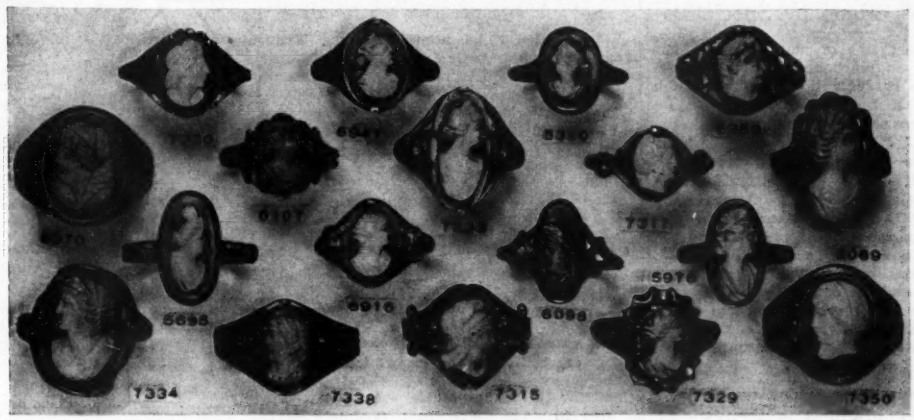
The stone-setter must have keen eyes and a delicate touch. He chisels the claws of each gold mounting, picks up the rich gem and deftly inserts it, fitting it so that there is no possibility of its becoming loose. He finishes by bending the claws over and chiseling their ends so that there will be no sharp points to catch in fabrics, thus loosening the setting and causing the loss of the stone.

Again the ring goes to the finisher, who smooths and brightens it so that no marks, scratches or blemishes shall appear to mar its perfect beauty when it is placed in the jeweler's case or window, and, finally, on the wearer's finger.

The ring must then pass the rigid inspection of men trained to detect flaws in its workmanship, in the metal or in the gem that adorns it. If such are found in the metal the ring goes back to the gold room to be made over at another melting.

This is the way that the Niagara Ring Manufacturing Co., Buffalo, New York, U. S. A., turns out its product. The idea back of it all is that each "Niagara" ring shall be as beautiful, rich and valuable as solid gold, real gems and the finest craftsmanship can make a ring. Their trademark is in the shape of a diamond with the letter N in the center.

Their factory occupies an area of 7,500 square feet. They make only solid gold, stone-set rings, but these in endless variety. They have, at present, about twelve hundred up-to-date designs and sell to the largest jewelry houses throughout the United States. The prices of their solid gold, stone-set rings run from $1 to $10, f. o. b. New York City. They specialize on reconstructed rubies and sapphires. Every article is guaranteed to be exactly as illustrated, or in accordance with sample. Further information regarding the products of this company, in detail, their terms and methods of sale, may be had by writing to them at the above address.



A few of the nearly 1,200 handsome, up-to-date designs for solid gold stone set rings made by the Niagara Ring Manufacturing Co.

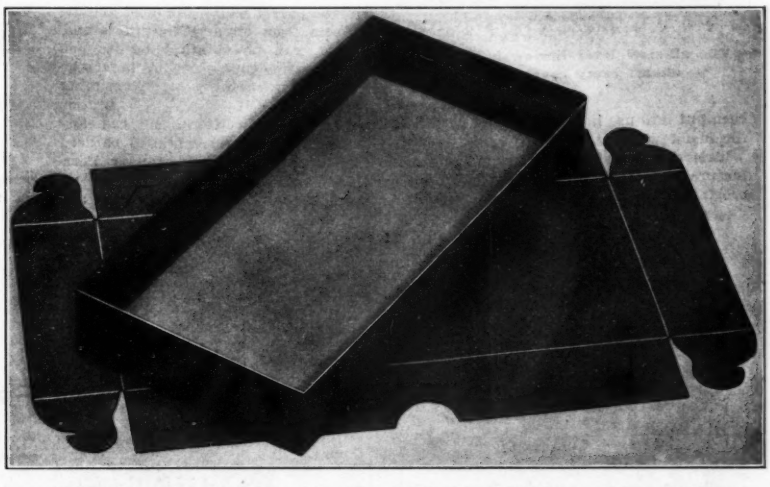
Paper Folding Boxes

THE folding paper or pasteboard box has become a modern business necessity. It is economical in cost and convenient to handle. It is a great time and space saver and prevents waste. It permits the printing of attractive, business-getting announcements anywhere on the box at any time. These boxes, folded, take up very little space, and, therefore, can be bought in large quantities without fear of their getting shopworn or soiled before they are used. They are sanitary as well as convenient, and everywhere are replacing the old way of wrapping or the old style paper box for the packaging of a steadily increasing variety of merchandise.

The line of paper boxes regularly manufactured includes clothing, laundry, bakery and lunch, confectionery, notion and sundry merchandise, hat, shoe and florist boxes. In addition to these styles there are many special boxes, such as those for macaroni, spaghetti, drugs, glass and bottles, dried fruit, cereals, butter, eggs, etc. In fact, the manufacturer aims to supply a box for every use.

"Lindley" paper folding boxes are all shipped completely "knocked down," and are so packed as to reduce to a minimum the danger of damage in transit. In clothing boxes, for instance, there are eight popular sizes made of twelve different colors and grades of cardboard. Laundry boxes are made in thirteen different sizes. An adjunct of these is the "Transo" glassine shirt protector, which is a large envelope of tough-fibred, transparent paper, insuring the delivery in perfect condition of finely laundered shirts.

Folding paper boxes of the kinds mentioned, and for many other uses, are made by the Lindley Box & Paper Company, Gas City, Indiana, U. S. A. They give special attention to export business, and will be glad to hear from anyone interested in folding paper boxes for any purpose. The correspondence may be in any language.



As the illustration shows, this box can be shipped flat, thus combining a minimum of space and a reduction of freight charges

Curry Combs and Light Hardware

NEW machinery is continually being devised or perfected for the manufacture of articles of light hardware that can be stamped from sheet metal. Ingenious in pattern, durable and moderate in price, they form an unusually profitable line for dealers to handle.

The Advance Manufacturing Company, Racine, Wisconsin, U. S. A., make curry combs, sashlocks, door catches, screen door hinges and articles of a similar nature. Their

principal product is currycombs. They turn these out in large quantities, comprising some forty or fifty patterns in standard finishes, which they sell to wholesale houses.

Dealers abroad who are interested in this line, or who have articles they wish to have manufactured on contract, can secure full information by writing to this company at the above address.

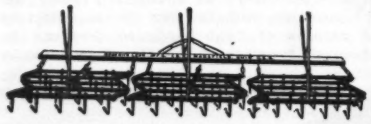
Farm Tools Made by Specialists

ALMOST every line of manufacturing has broadened so much in the last twenty-five years that concentration of effort, which is another name for specialization, is more than ever necessary in order to achieve the best results. A concern that specializes, year after year, on certain classes of tools or machinery can devote much attention and skill to improving its product. By equipping its factories with apparatus that is particularly appropriate to its purposes it is able to secure the greatest economies of production. Specialization permits the use of the best materials and works for the greater satisfaction of the dealer and consumer by supplying them with articles whose value, as compared with their price, is unusual.

Zig-zag all-steel harrows are particularly strong and durable

This is notably true regarding farm implements and machinery of all kinds. The Roderick Lean Manufacturing Company, for example, have for half a century concentrated their efforts upon harrows and cultivators and other implements for tilling the soil. Simplicity of design and the elimination of unnecessary effort are two of the things to which they have paid particular attention.

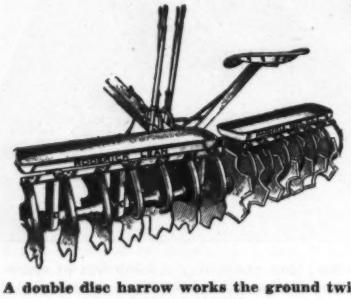
In the "New Century" leverless cultivator the weight of the operator is utilized to do the work that is commonly done by the arms of the rider on some of the other types of cultivators. The manufacturers state that more than 200,000 of their cultivators have



The all-steel lever harrow is adapted to almost every country's needs

been put into use in the American corn belt in the last few years.

This concern was a pioneer in the manufacture of steel spike harrows. They have specialized in harrows, in fact, and build a large and varied assortment of them. Like the rest of their products, they are sold all over the world.



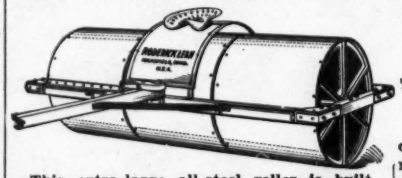
A double disc harrow works the ground twice with one operation

Weeding is slow, back-breaking work when done by hand; with a riding weeder it is as near a pleasure as any farm labor can be. These riding weeders are twelve feet in length and are equipped with 64 round teeth, which can be raised and lowered by a lever fitted with spring pressure and can be made to penetrate the hardest ground.

This company's "Diverse" cultivator is a handy one-horse tool that is adapted for the cultivation of any crops planted in rows. By removing the center tooth, or the outside teeth, this machine is especially adapted for narrow planted crops.

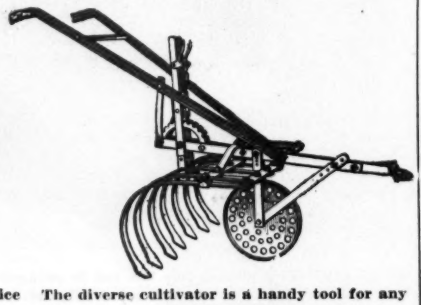
The all-steel roller here illustrated is an extra large roller built for export needs. A complete line of other rollers and pulverizers is also manufactured.

The Roderick Lean Manufacturing Co., Mansfield, Ohio, U. S. A., are the makers of all these tools and machines, and of many



This extra-large all-steel roller is built especially for the export trade

others for the tillage of the soil. They will be glad to send, on request, complete data relative to their product or detailed information regarding any particular machines they make. Dealers in or distributors of farm implements, and especially those who are in position to act as agents, will find this line of especial interest to them.

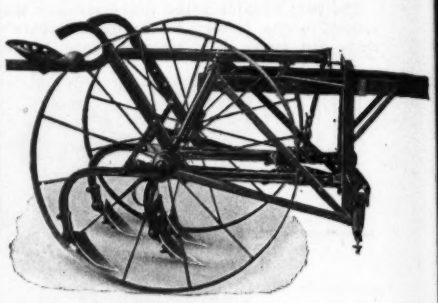


The diverse cultivator is a handy tool for any crops planted in rows

Decorative Possibilities of White Portland Cement

WHILE the purely utilarian merits of Portland cement are now universally recognized by the architect and engineer, the employment of the ordinary kind of this material has been somewhat limited by the not particularly attractive appearance of the finished product. This objection has now been removed by the introduction of a white Portland cement by the Sandusky Portland Cement Company, of Sandusky, Ohio, U. S. A. This article, which is being marketed under the name of Medusa White Portland Cement, possesses all the valuable qualities of ordinary Portland Cement, and as its color is of the purest white, the most artistic effects from an architectural standpoint, can be obtained by its employment, either alone or in combination with stone, brick or other cements.

In their directions the company state that this cement is to be used in the same way as ordinary Portland, from which it differs in no respect, except that it is pure white, although to produce white concrete or artificial stone it should be mixed with white sand, crushed white quartz, ground marble or ground white limestone. Its decorative possibilities are practically unlimited, but among the purposes for which it can be used with advantage may be mentioned steps, railings, columns, doorways, window casings, cornices, panels and other building ornamentations; a pure white sparkling stucco; white concrete building blocks; white floors, stair-

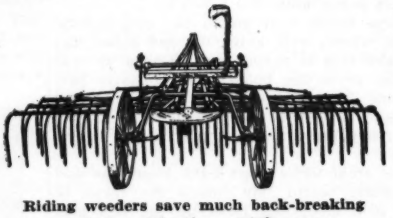


This type of gang cultivator—the New Century leverless—is much used

cases, panels, reliefs and other interior decoration; statuary, for which it is infinitely superior to plaster; monuments, vaults, urns, plot borders, etc., in cemeteries; fountains, seats, railings, steps, walks and gateways in parks; and, with the addition of coloring matter, tiles for the floors and walls of bath rooms. Besides the above, it is claimed to be the best material yet produced for setting and pointing up the joints between blocks or slabs of marble, limestone or brick.

The Sandusky Portland Cement Company also call attention to their Medusa Waterproofing compound, which is a fine white powder consisting of fatty acids chemically combined with lime. The manufacturers state that Medusa Waterproofing not only prevents dampness in concrete, but that its waterproofing qualities are everlasting. They also claim that it is really the lowest-priced article of the kind on the market, as a smaller amount is needed than of other waterproofing compounds.

Interested parties desiring further particulars regarding these specialties should write the company for one of their catalogues, copies of which will be sent to any address upon request.



Riding weeders save much back-breaking work in cultivating certain crops

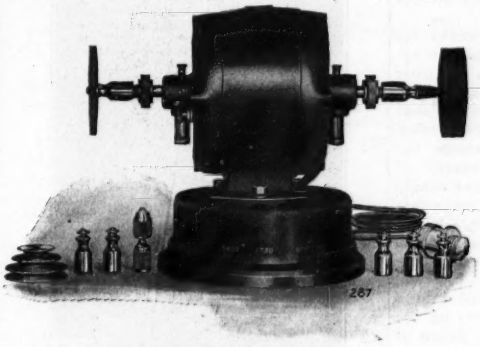
Direct Current Motors

A BULLETIN regarding their new type of steel frame direct current motors, of extra compact construction, from ⅛ to 2 horsepower inclusive, that are especially adapted for any service where the space for installing the motor is restricted, has just been issued by the Robbins & Myers Company, Springfield, Ohio, U. S. A. This firm also manufactures special motors with steel frames in various types and capacities for piano-player, printing press and other services where steel frame construction is desirable.

"Service" is the title of a handsome booklet just issued by the Robbins & Myers Company, Springfield, Ohio, manufacturers of small motors. It shows how the small motor problem is one that can be best handled by the electric motor manufacturer who specializes in the small sizes.

A New Dental Lathe Motor

THE accompanying illustration shows a new alternating current motor designed expressly for the use of dentists and jewelers. It is manufactured by The Robbins & Myers Company, Springfield, Ohio, U. S. A. This motor develops 1/6 horsepower and is built for operating on a 60-cycle current of 110 or 220 volts. A controlling device in the base gives speeds of 1,750 and 3,400 revolutions per minute. If desired, however, the motor can be operated successfully on 50-cycle circuits at speeds of 1,400 and 2,900 revolutions per minute.



A convenient alternating current motor designed expressly for dentists and jewelers

A handy food chopper

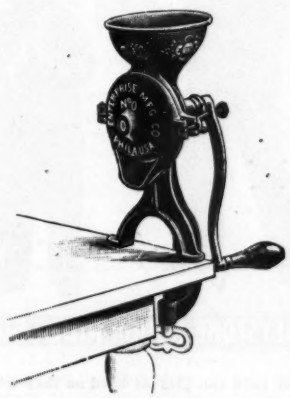
The end heads are solid and completely protect the working parts from dust and dirt. The motor is of the clutchless type, and the starting winding is automatically cut out when the motor comes up to speed.

A motor of the above description is particularly profitable and convenient where only a small amount of power operating at high speed is required, such as in polishing, buffing, small tool grinding, etc.

This firm also manufacture rotary transformers, for converting a direct current into an alternating current and stepping up the voltage to the pressure required. They also make direct current motors for driving all kinds of machinery used in printing, bookbinding, etc. For prices and further information address The Robbins & Myers Co., Springfield, Ohio, U. S. A.

An Extensive Line of Patented Hardware Specialties

IT is a long step from the wooden chopping bowl of our grandmother's day to the meat and food chopper that has taken its place in every up-to-date kitchen. The same firm that is largely responsible for this progress is an extensive manufacturer of other patented hardware specialties. In addition to hand and power meat and food choppers in almost endless variety, it also makes sausage grinders and stuffers, coffee grinders, lard and fruit presses, meat and vegetable shavers and cutters, nut crackers, raisin pitters, meat and fruit juice extractors, grinding and pulverizing mills, self-measuring pumps for all kinds of liquids and semi-liquids, ice-shredders, bone, shell and corn mills, vegetable slicers, cherry stoners, etc.



This hand mill will granulate 6 ozs. of coffee per minute

The meat and food choppers are particularly interesting. These ingenious machines are of many sizes and types, from the small hand ones used in the household, with a capacity of two pounds of meat per minute, to the large machines for sausage-makers,

Family size meat chopper, capacity 1½ lbs. per minute

operated by steam or electric power, that will cut 2,000 pounds of meat an hour.

Each machine, no matter how small, is provided with four knives. The finest knife is intended for chopping sausage, mincemeat, Hamburg steak, croquettes, cocoanut, horseradish, stale bread, crackers, etc.; the medium knife is for scrapple, codfish, corn for fritters, scrap meat for poultry, etc.; the coarse knife is best for chopping hash, head cheese, tripe, chicken or lobster for salads, and vegetables of all kinds for soup or other purposes; while the fourth knife is designed for making butter from nuts of an oily nature.

The use of meat juice in cases where nourishment is required in a concentrated form is becoming more general every day, and the small meat juice extractors made by this firm are especially handy and efficient for this purpose. The fruit juice extractors, for making wines or jellies, are also in great demand, and the same may be said regarding the cherry pitters and raisin seeders, more or less use being found for them in practically every household.

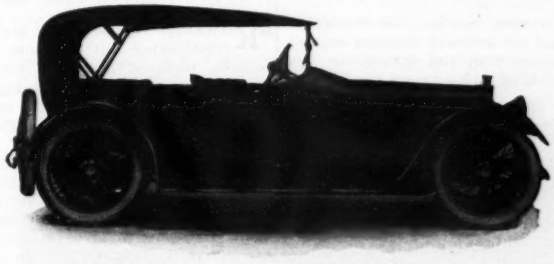
These products of the Enterprise Manufacturing Company, Philadelphia, Pa., U. S. A., are being sold in many parts of the world, the merchants finding them an exceedingly profitable line to handle. Those wishing further particulars should write for a copy of the company's catalogue, in which all their specialties are illustrated and fully described.

Few Changes in this 1915 Automobile

OWING to the great success of their Model 6-46A in 1914, the Pullman Motor Company, York, Pa., U. S. A., have decided to present practically the same car for the season of 1915, with a few minor improvements, under the title of the "Pullman Model 6-48." The changes are mainly in the way of additional refinement of design and the elimination of unnecessary weight, but they enhance considerably the value of the new offering.

The wheelbase has been lengthened four inches, making it now 134 inches, and the body is larger, having two inches more room in the driver's compartment and six inches more in the tonneau, while the seats have been raised as well as widened and deepened, so as to make the car more comfortable. The rear doors have been brought back, which makes entrance and egress more convenient. The spring suspension has been strengthened and the car has been lightened throughout, thus lessening the strain on the motor. "Leatherette" is used on the one-man top instead of mohair, improving its appearance and rendering it more durable, while the dashboard has been covered with leather, which gives it a better appearance and prevents warping by the weather, or the surface being marred by small scratches. A 12-volt electric system is now exclusively used for starting, lighting and gear shifting, and the radiator is of an entirely new type, combining light weight with greater cooling capacity.

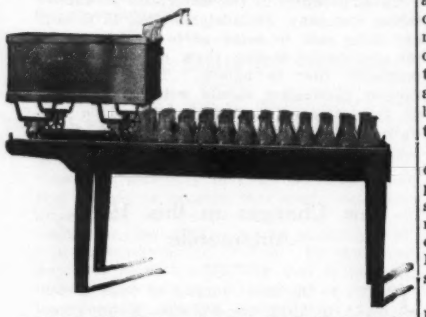
These refinements and improvements are expected by the manufacturers of the Pullman car to increase considerably its already great popularity, and they state that the new model, with its wire wheels and graceful streamline effect, is one of the most distinctive offerings that has appeared this season. The chassis is regularly equipped with either two or five-passenger bodies, but, if desired, a seven-passenger body can be furnished at a slight extra cost. Every Pullman Model 6-48 is fitted with what the manufacturers call a "one-man top," that is to say, a top that can be raised or lowered by one man without any help. Any person interested in obtaining particulars regarding this high quality automobile should write the manufacturers for catalogues containing prices, full specifications and other information without delay, addressing them as above.



The 1915 Pullman model 6-48, with 134-inch wheel base, larger body and optional electric gear shift

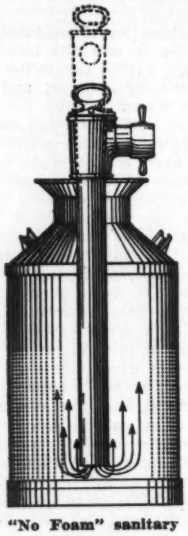
Devices for the Sanitary Dairy

MILK is a natural germ carrier. Unless the strictest care is incessantly exercised in its handling, in order to preserve it from contamination, it can spread contagion quicker than almost any other agency.



This bottle filler works four to six times faster than it can be done by hand

Therefore, in civilized countries, boards of health exercise the most rigid supervision over the milk supply of every community. Sanitary conditions have become a necessity



"No Foam" sanitary can filler

in the modern dairy, not only for safe-guarding health, but for ordinary business reasons.

Every creamery-man and farmer—in fact, every one handling milk—knows how difficult

Combined sanitary bottle sterilizer and truck

it is to keep it from souring. The bacteria that produce acid multiply at an enormous rate in warm milk and cause it to sour quickly. The only way to prevent this is to cool the milk as soon as possible. In doing this the milk must be thoroughly aerated in order to make it palatable by freeing it from all its primitive odors.

Cooling milk by setting the cans in water is not the most efficient way, because the process of cooling is slow, which allows the bacteria to increase steadily until the temperature is low enough to retard their multiplication. The most rapid method is an arrangement of horizontal tubings, one above the other, through which cold water passes continually. The milk is poured in at the top and flows down, being retarded in its course by each line of tubing. This not only aerates the milk but cools it thoroughly.

In arranging a dairy sanitary means for conveying the milk and cream from one apparatus to another are a necessity. A truly sanitary conduit system, when in place, has no shoulders or recesses in its interior that can serve as a lodging place for milk or dirt. It has nothing inside that can escape the scouring action of steam or wash water.

The same is true of the pumps that should be used in the strictly sanitary, up-to-date dairy. They should be of the simplest pattern so that they can be cleaned quickly and easily, and should have no crevices where dirt or foreign matter can gather.

When milk is poured from a pail into a large can a quantity of foam gathers on the top. This has to settle before the filling of the can may be completed. This difficulty is obviated by a device called the "No Foam" Sanitary Can Filler. A vertical tube, connected with the vat from which the milk is drawn, is let down into the can almost to the bottom. A stop cock is turned, the milk flows, and the can is filled without a bubble.

Filling bottles by hand is no longer the practice in the modern dairy, for it can be done in another way that is more speedy and sanitary. The bottles are placed in four or more rows upon a table or sink. A metal tank, holding from 24 to 32 gallons, is wheeled over this. With a downward motion of the lever fastened to the filling attachment, four to six bottles are filled at one time, or one bottle can be filled separately.

All these and many other devices for the dairy and the creamery are fully described in the bulletins and catalogues of the Creamery Supply Manufacturing Co., Clinton, Wisconsin, U. S. A. Dealers and others interested in dairying on a large or small scale can obtain much useful information by writing to the above address. This company also invites correspondence from merchants or distributors who are in a position to act as their agents.

One-Piece Garments for Children

"ROMPERS" are one-piece garments, like a combination suit of blouse and knickerbockers, designed especially for small boys and girls to wear while playing. They are made in many styles, and the materials may be either cotton or linen. The great advantage of "rompers," from the parents' standpoint, is that they can be washed easily. Laundry bills are cut to a minimum. The children like them because they are far more comfortable than ordinary dresses, and because they are so strongly made that they are not easily torn. They can be mended as easily as they can be washed. They afford a freedom of movement that is the joy of every child who wears them.

These rompers are made in many styles, such as "Creeper," for children from six months to two years old; "Dutch Neck;" "Beach," for the seashore; "Sailor Collar," "Middy" and "Bloomer." One or another of these is suitable for any child of from six months to eight years of age.

The "creeper" is cut full and neatly trimmed; the entire seat and back can be unbuttoned. The "Dutch Neck" is made generously large and is specially designed for lively youngsters. It is fastened at the knee with elastic and buttoned across the seat. The "Middy" and the "Bloomer" have detachable knickerbockers. All these suits are made to stand the hard usage of rollicking, healthy children, indoors as well as out.

These are a few of the styles in "Keystone Rompers," made by the Cleveland & Whitehill Company, Newburgh, New York, U. S. A., who claim to be the originators of "rompers," and the first to apply that name to juvenile garments of this description.

This firm also manufacture boys' overalls, from fine textures of blue denim, gray coverts and Stifel indigoes. These have high back

Children like rompers because they are so comfortable

shoulder straps, and the seams are stitched to withstand severe strain and long service. They also make a large variety of trousers for boys, and Boy Scouts' camp suits, of genuine khaki, in the latest walnut brown shade, trimmed with gun-metal detachable buttons, attached suspenders with neat nickel trimmings, adjusting buckles and eight big pockets. The makers say that these Boy Scout suits wear like iron.

These garments meet with a ready sale in every climate and every country of the temperate and torrid zones. By addressing the manufacturers, as above, full details of this line may be obtained. The manufacturers state that they co-operate to the fullest extent with the dealers handling their goods,

Active boys can play as hard as they wish in these suits

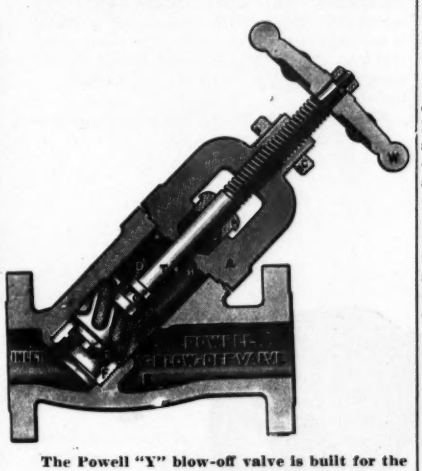
and supply them with a large and varied assortment of advertising displays, among which are hand-colored lantern slides, tracing books for children, cards in colors, and newspaper electrotypes.

Steam Valves for High Working Pressure

THE severe demands made upon blow-off valves frequently cause them to break down or leak badly after a few months, and thus become practically useless. Owners and operators of steam plants, therefore, will be interested in the announcement by The Wm. Powell Company, manufacturers of engineering specialties, that after a long series of experiments they have succeeded in eliminating all weak points and are now producing an exceedingly durable valve, which they are offering to the trade as the Powell "Y" Blow-off valve.

The illustration given herewith shows clearly the improvements that have been made.

"B" is the body or shell. The yoke top "A" is secured to the body by studs. The packing is secured and regulated by the Powell Patent Pusher Gland "P," which is operated by the outside screw nut "C" above the bridge of the yoke "A". This simple construction enables the engineer to adjust the pressure at any time with an ordinary monkey-wrench. All engineers will appreciate this improvement, especially as it eliminates the danger of accident when the packing has to be renewed. The faces "D" and "H," fitting tight, permit the valve to be repacked under pressure when wide open. The plunger "D" is of brass, milled to receive the collar on stem "T". Spiral grooves are cast on the outer face, which, receiving the pressure from the steam as the valve is opened, causes it to revolve as it nears the seat when closing. This has the effect of



The Powell "Y" blow-off valve is built for the most severe service

keeping both disc and seat clean of scale and sediment. The seat ring "F" has been dropped down lower, the better to protect it from the cutting effect of the rushing steam as the valve is opened. To this plunger is attached the Powellium White Bronze renewable and regrinding disc "E," secured to stem by disc nut "S". The disc face and seat-bearing are constructed at such an angle that it is impossible for sediment or scale to lodge between them, either while blowing off or closing down the disc. The superior metal of which they are constructed insures a long life to the valve.

To regrind this valve it is only necessary to insert a wire pin or nail through the hole "R" in the plunger; this locks the disc. Then rotate back and forth with a little fine brick dust or sand on the bearing. The seat ring "F" is of Powellium White Steam Bronze and has two faces, so that when one is worn it may be readily removed and reversed by means of the lugs cast in the throat of the ring. The disc "E" is not only regrinding and reversible, but is also renewable. It is cast of "Powellium," a white bronze, which, in point of service and durability, the manufacturers claim, will outlast any other known disc metal and is guaranteed to stand 2,000° of heat. The entire valve is constructed of the best material, is very heavy, well proportioned, and of excellent workmanship. These valves are made in 2" and 2½" size, with screwed or flanged ends. Each valve is tested to 250 pounds hydraulic pressure and is guaranteed to stand the severe service to which it may be subjected. Catalogues and other information can be obtained upon application to the manufacturers, The Wm. Powell Co., Cincinnati, Ohio, U. S. A.

The Automobile Increases Efficiency of the Salesman

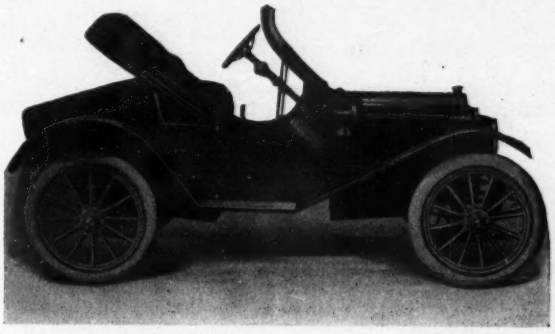
WHERE there are plenty of railroads, or where there are few or none at all, the automobile is indispensible to the salesman. A commercial traveler who has to depend on the railroad cannot concentrate his mind on his work. Subconsciously he is always thinking about the train he has to catch, and before he knows it he is glancing at his watch and trying to hurry the man whose order he is after. The study of timetables and the figuring out of train connections encroaches much on the hours when the salesman should be selling goods; also sitting in ill-ventilated railway coaches makes him sleepy. Altogether, he loses much of his efficiency.

Where trains are infrequent and there are towns and villages that are not on the railways, the small motor car that will go anywhere a horse can becomes a necessity. An American automobile company has been making a careful study of how the motor car increases a salesman's efficiency, and has just issued an attractive booklet on the subject. It is called "Selling by Automobile," and is sent free of charge to anyone asking for it.

"Driving a car makes a man of a salesman," says this booklet. "It steadies him. It keeps him alert and wide awake. It develops his nerves, it quickens his thoughts, it puts more red blood in his veins. It makes him a better representative of the house he works for."

A number of interesting comparisons are made between railroad salesmen and automobile salesmen, showing in a logical way that the roadster car increases selling efficiency, saves time, greatly broadens the territory covered or the number of calls per day, and operates at a cost per mile that is considerably less than traveling by rail. It is said that a number of representative American firms have adopted this plan and report that it works advantageously, particularly in sections that are closely settled with small towns.

This booklet, which is issued by the Metz Company, Waltham, Massachusetts, U. S. A., also illustrates and describes the new fore door model of the Metz Roadster, which, because of its capabilities and low price is an ideal car for the salesman's use.

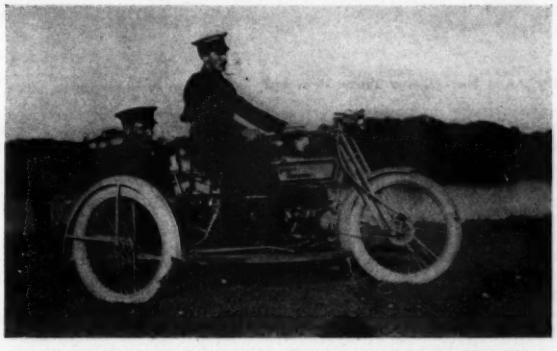


The Metz "Twenty-two": a car with gearless transmission and 4-cylinder, water-cooled motor

Motorcycles for Light Artillery Use

ONE of the officers of the Ninetieth regiment of the Canadian militia, with headquarters at Fort Osborn barracks, Winnipeg, recently designed a new fighting machine. It is a Harley-Davidson motorcycle with a Maxim gun mounted on a side car chassis. The weapon has a greatly increased radius of effective action as compared with other artillery. It can travel four miles an hour—the pace of marching infantry—or it can be hurried to a distant point at a rate faster than forty miles an hour.

The chief advantage of the motorcycle Maxim gun is its superior speed compared with other artillery, and the rapidity with which it can be mobilized where needed for effective action, even under very difficult circumstances. In its trials in Canada, before the Ninetieth regiment was ordered to the front, it was driven through water and over plowed fields at top speed for two and one-half hours without its efficiency being in the least impaired. The machine used was a regular stock motorcycle made by the Harley-Davidson Motor Company, Milwaukee, Wisconsin, U. S. A.

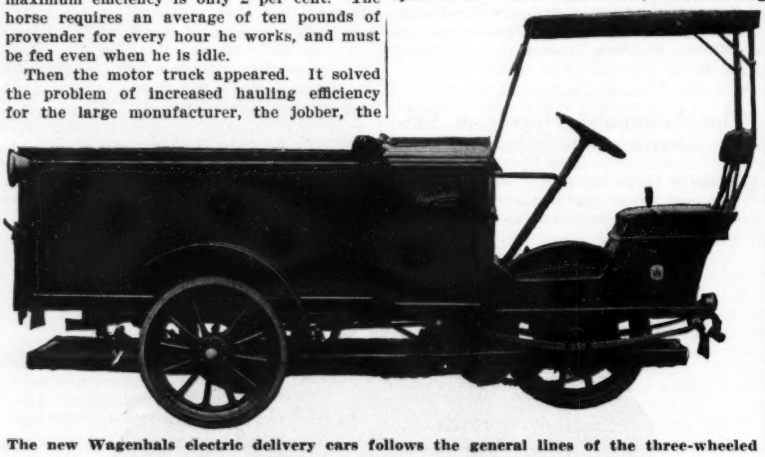


A Harley-Davidson motorcycle, with Maxim gun sidecar chassis, going abroad with the 90th Reg., Canadian militia

A Three-Wheel Light Delivery Car

ONE of the greatest industrial problems is that of distributing goods locally. Until the advent of the automobile the horse was the only solution—an unsatisfactory one because the horse is a particularly inefficient motor. Scientists assert that the horse's maximum efficiency is only 2 per cent. The horse requires an average of ten pounds of provender for every hour he works, and must be fed even when he is idle.

Then the motor truck appeared. It solved the problem of increased hauling efficiency for the large monufacturer, the jobber, the brewer, the large retail store, and so on, but the great mass of manufacturers and merchants still had their small delivery problems. These have been settled to a certain extent by lighter vehicles, but there remains a large class of businesses and industries that continue to use the horse or push carts because motor transportation does not seem to offer sufficient economies to offset the relatively heavy investment. Among these are the small retailers, laundries, plumbers, etc.



The new Wagenhals electric delivery cars follows the general lines of the three-wheeled gasoline cars by the same maker

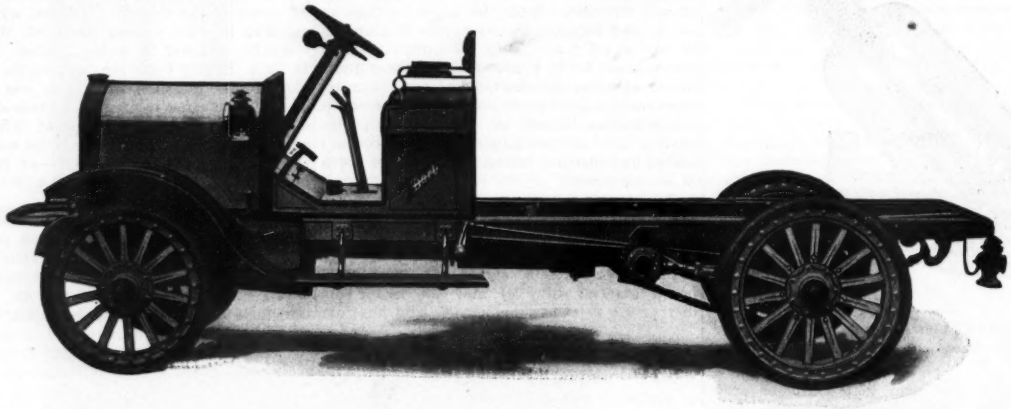
The Wagenhals car is designed to meet the requirements of this large class by reducing the first cost and upkeep to a point where they show a positive saving in the expenses of distribution.

The one radical difference between this and the ordinary car is the drive wheels. Instead of the two rear wheels found on other cars, the Wagenhals is driven by one, placed in the center. Obviously, this eliminates 25 per cent. of the tire cost. The manufacturer claims that it does away with the cause of a large proportion of the mechanical troubles of the ordinary car—the differential, as the rear axle of this three-wheel vehicle has only 45 parts, as compared with 723 in the ordinary machine.

It is also claimed that the gasoline consumption is reduced to a minimum, the average being 18 miles to the gallon. The parcel space is in front of the driver, thus avoiding loss by theft or through parcels being jolted off.

As an example of one of the many uses of this car, it is stated that recently, after making a thorough test, the United States Government bought 21 of these vehicles for its postal service.

Inquiries in any language, addressed to the Wagenhals Motor Company, Detroit, Michigan, U. S. A., will receive prompt attention and reply. This company will be glad to consider the establishment of foreign agencies in places where it is not represented.



The Model C chassis Dart Motor Truck develops as high as 40 horsepower when pulling the machine loaded to 3,000 or 4,000 pounds capacity

An Efficient and Economical Motor Truck

THE foreign trade in auto trucks has been especially active during the past two months and the outlook for the future is even more promising. This increased demand for motor trucks has given a stimulus to the American manufacturer who is now placing many excellent trucks on the market. The Dart Motor Truck Co. furnish a line which should be particularly successful in satisfying this demand. The firm state that their trucks are made at the lowest possible cost and are both efficient and durable in service. They manufacture a complete line, ranging in capacity from 750 to 4,000 pounds, the Model C chassis shown in the accompanying illustration having a capacity of 3,000 to 4,000 pounds.

The Dart engine on the Model C is the high power L-head type, four-cylinder, and develops as high as 40 horsepower, pulling the machine loaded to full capacity 3,000 to 4,000 pounds at a speed of 15 miles per hour without difficulty. In the matter of ignition and carburetor adjustment this engine is especially well equipped. With a view to helping new drivers, the high tension ignition system has a set spark which makes it impossible for the machine to kick back on starting, while the Stromberg 1¼-inch carburetor is set at the factory, and with the exception of the air adjustment, cannot be tampered with by inexperienced operators. These factors should prove especially beneficial to concerns who are introducing motor trucks into their service for the first time and who are forced to break in new men not familiar with motors.

Both the lubricating and cooling systems on this engine are thoroughly up-to-date and designed to prevent the inconvenience and expense due to an overheated engine or burnt out bearings. The lubrication is self-contained within the crank case, being forced by a positive pump through to the upper part of the crank case where a constant level is maintained. The engine is water-cooled by a centrifugal pump. The honeycomb radiator is fastened to the frame with a ball and socket trunion which this company claim is the most satisfactory method of hanging a radiator.

The Dart brakes are of the self-intensifying type, and by placing the entire braking system on the rear drum the strain is taken from the jack shaft sprockets, chain and jack shaft bearings. Both the service brake, which is external contracting and the emergency brake, which is internal expanding, are raybestos-faced and have proved entirely satisfactory.

A special effort has been made to have the wheels and springs as strong as possible. The wheels have square spokes made of selected second growth hickory and both front and rear springs are semi-elliptic, be-

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Ladies' Blocked Hats

NEW York City has become one of the world's great fashion centers for millinery as well as in other matters of feminine apparel. The accompanying illustrations exemplify three of the latest styles in ladies' untrimmed hats.

The "shape" or blocked hat is the foundation of the fashions in millinery, and on that account too much attention cannot be paid to the correctness of its contour. Those shown herewith are some of the most recent creations of a famous New York designer, and have received the stamp of fashionable approval.

This season's blocks are in a greater variety than for many years past. The "turned up" hat seems to be the favorite, although flat sailor shapes are still much in vogue. The principal materials for wear in temperate weather are straw and Milan hemp, while for cooler seasons the blocks are of satin, felt, plush, velvet or other seasonable material. In dress hats black velvet, or materials of cerise or fawn color are popular in New York at present.

Ladies' blocked hats have become a large item of export in the millinery trade of the United States. The absence of trimming makes them easy and economical to ship, as the shapes nest closely and take up little space. A relatively small investment will give a merchant or milliner an excellent assortment. Full details regarding this interesting line, together with prices, may be obtained from the manufacturers, A. M. Loewenthal & Son, 106-108 West 32d Street, New York City, U. S. A.

These illustrations show three attractive styles of ladies' blocked hats made by A. M. Loewenthal & Son, in the most popular shapes that have received the stamp of fashionable approval in New York

Fashionable Haberdashery

IN matters of styles in men's wear the successful haberdasher needs to be not only up-to-date, but just a little ahead of time. In no other way can he fit himself better to meet the demands of his best trade than by studying catalogues of manufacturers of the lines he handles. He may not find new ideas in every one of them, but he is more than likely to run across suggestions that will freshen or strengthen his stock where it needs it. Among the most attractive of such catalogues are those put forth by W. O. Horn & Brother, 846 Broadway, New York, U. S. A. They are printed in colors and show as well as can be shown by ink and paper the latest novelties and staples in bath robes, vests, hosiery, neckwear, holiday sets, etc.

Cognac of Superior Quality

THE superior medicinal qualities of high-grade cognac have always been recognized, and it is owing to this fact that it has acquired its position in the sick room as one of the most popular of liquors. When pure, it is undoubtedly one of the most wholesome of spirits and it is certainly more generally used as a stimulant and to relieve the sufferings of the sick and injured than any other beverage of this class. The attention of those who desire to obtain the genuine article—the product distilled from the wines of the Charente—is called to the firm of Messrs. Marett & Co., Guy Gautier & Co., successors, who are said to be one of the oldest concerns engaged in this line, and whose output of cognac brandy has always enjoyed an excellent reputation for quality among the trade.

The firm of Marett & Co. was established in 1822 by Mr. Marett, who acquired a profound knowledge of the brandy trade through a prolonged stay in the offices of his fellow countrymen, Messrs. Martel. Towards 1830 he took into partnership his son-in-law, Mr. Arbouin, and after his death the firm name became Arbouin, Marett & Co., but their brand, which by this time had become well and favorably known in the English, American and Australian markets, was continued as Marett & Co. In 1871 Mr. H. Dyke Gautier joined Mr. Arbouin, and remained his partner until 1880, when the latter retired from business. Mr. Gautier thereupon became sole proprietor, and he has since been succeeded by his son.

Mr. Gautier is descended from one of the oldest and most respected families of brandy merchants in Cognac, being the great grandson of Guy Gautier l'Ainé, who was established in that district as far back as 1747, and did an important trade, not alone in France, but also with England, Belgium, Germany and Holland, which at that time was an important market.

The experience secured by this house during this extended period has enabled it to acquire a knowledge regarding the production and handling of brandy that could be obtained in no other way, and the proprietors are exceedingly proud of the reputation for purity and quality in which the product of their distillery is held by the trade in all parts of the world. The greatest attention is given to the process of distillation, by men who have spent a lifetime at this work, and equal care is given to the selection and treatment of the wood used for making the casks in which the brandy is matured.

Brandy stills in the establishment of Marett & Co.

Making barrels for cognac—an important department of Marett & Co.

Correspondence will be welcomed by the firm from department stores, wholesale dealers in liquors and others desiring to purchase goods of guaranteed quality direct from producers, and those interested should address Guy Gautier & Co., Cognac, France.

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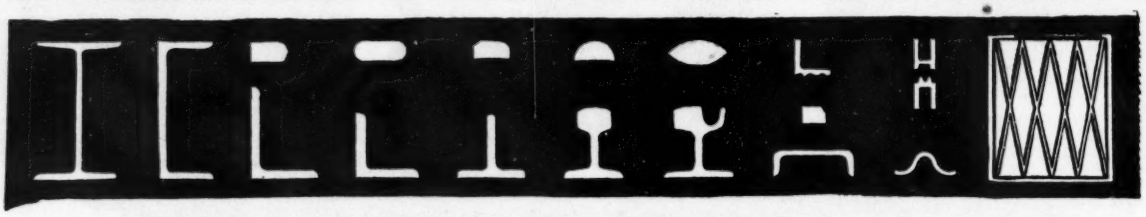

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Plates, thin, medium and thick. Chequered Plates and Flitch Plates.

Prices quoted for rolling special sections on receipt of models or sketches.

The illustrated catalogue is sent free upon application.

Ceilings that are Safe and Beautiful

ALTHOUGH the world's earthquake regions have no climatic boundaries, these disturbances are felt with greater frequency in the tropics. Though shocks are experienced less frequently in the temperate zones they are always accompanied by greater loss of life because buildings are not constructed to withstand them. Even the slightest tremor will shake down plaster ceilings and cause walls to crack dangerously.

Metal ceilings are especially necessary in countries where earthquake shocks may be expected. In the regions where these disturbances occur, either at long or short intervals, the use of plaster ceilings is out of the question. On this account, ceilings of tightly stretched canvas, heavily painted or kalsomined, are almost universal. But these canvas ceilings are far from durable. They have to be renewed frequently. During the wet season of the tropics they absorb a great deal of moisture, which makes the canvas heavy and causes it to sag and rot. Holes for ventilation have to be left in the corners, and these form convenient avenues of ingress and escape for all sorts of vermin.

Metal ceilings are vermin proof. Because they are not one solid piece, and because their interlocking joints allow a certain amount of play, they are perfectly safe in earthquake countries and will withstand shocks that are not severe enough to overthrow the houses themselves.

The Garry Iron & Steel Co. are extensive manufacturers of metal ceilings and side walls. Their products are used in many cities of the United States and of foreign countries because they have been found superior to plaster.

Inquiries regarding agencies for these metal ceilings should be addressed to the Garry Iron & Steel Co., 525-527 West 23d Street, New York City, U. S. A.

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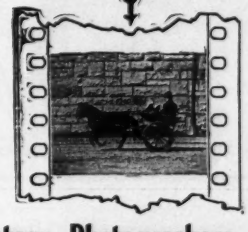

Sportsmen, Travelers, Explorers, Tourists, Amateur Photographers

The Simplex Multi Exposure Camera uses a 50 foot cartridge of Eastman Standard perforated Motion Picture Film, taking either 800 small or 400 double size exposures. Film costs 4 cents a foot and can be had of all photographic dealers. Exposed portion of film may be removed at will, developed and printed on paper or on positive film for lantern projection. Subjects enlarged with sharp detail to 8 x 10 or 11 x 14.

The Simplex Multi Exposure Camera is constructed of highest grade aluminum, brass and nickel steel, handsomely finished, fitted with 1 c. Tessar F. 3. S. anastigmat lens, No. 00 Compound Shutter, direct view finder, focusing scale, tripod sockets, expose counter, ready for instant use. The box is 7 inches long, 3 inches wide and 2 inches high, and may be used in projecting or enlarging. The **Simplex** is light in weight, simple of operation and fits the pocket. **Price Complete, $65.00**

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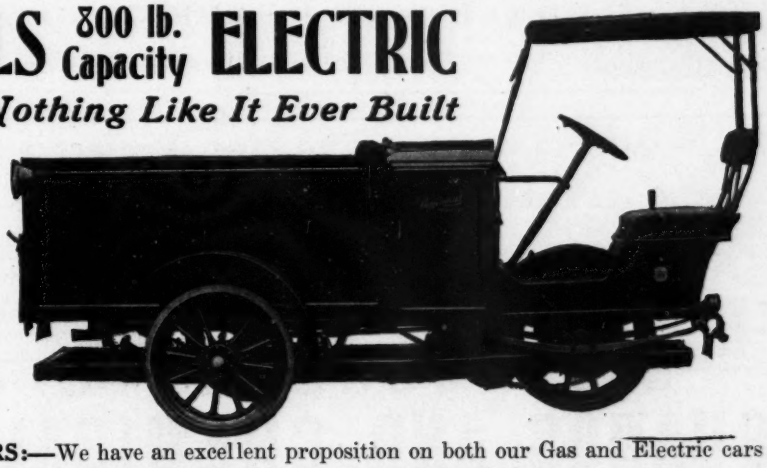

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Wagenhals Cars not an experiment, having years of service behind them. Used by the United States Government for parcel post and mail collection, and such representative concerns as Horlick's Malted Milk Co., Paige-Detroit Motor Car Co., Filene's department stores, and numerous others.

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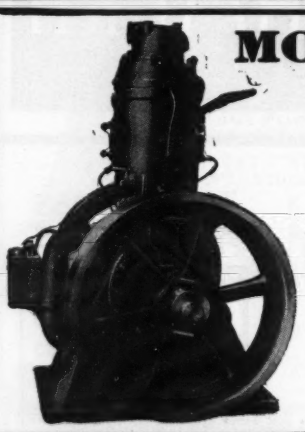

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